

**APPENDIX D.2 COMMENTS AND RESPONSES**

**DRAFT URANIUM MANAGEMENT PROGRAMMATIC  
ENVIRONMENTAL ASSESSMENT**



## APPENDIX D.2. COMMENTS AND RESPONSES

### **Response to Comments on the Programmatic Environmental Assessment for the U.S. Department of Energy, Oak Ridge Operations Implementation of a Comprehensive Management Program for the Storage, Transportation, and Disposition of Potentially Re-usable Uranium Materials (DOE/EA-1393)**

*Gregory L. Simonton*  
*Executive Director*  
*Southern Ohio Diversification Initiative*

1. Please identify any other potentially reusable uranium material/uranium feed currently located at PORTS.

**Response: Materials deposited throughout the cold standby and shutdown cells are a source of future potentially reusable uranium.**

2. What buildings would be used at PORTS for this project?

**Response: Due to security concerns, specific building locations cannot be identified in the PEA. However, should an alternative involving the PORTS site be selected, the UMG Program commits not to exceed the storage capacity of the existing UMG storage facility. This commitment to limit material within the confines of the existing UMG facility will further ensure that the disposition of material remains a priority. As uranium in the inventory is dispositioned, additional uranium materials in the UMG inventory at other DOE sites could then be stored at PORTS on an interim basis. However, should an alternative involving the PORTS site be selected, the UMG Program commits not to exceed the storage capacity of the existing UMG storage facility. This commitment to limit material within the confines of the existing UMG facility will further ensure that the disposition of material remains a priority. As uranium in the inventory is dispositioned, additional uranium materials in the UMG inventory at other DOE sites could then be stored at PORTS on an interim basis.**

3. What building(s) are included in the 450,000 square feet of available building space cited in the Draft Environmental Assessment (DOE/EA 1393)?

**Response: See response to comment #2.**

4. What other facilities would be required to support the DOE preferred option to consolidate all of the material at PORTS?

**Response: The PEA identifies the need for approximately 168,000 ft<sup>2</sup> of additional storage space. Assuming additional space is required, then with the exception of temporary use of roads and the equipment needed to offload and store the uranium materials, no other facility use is anticipated. However, in consideration of comments received, the UMG Program does not plan to use additional buildings at PORTS. DOE anticipates storage at PORTS will be limited to the current UMG storage facility.**

5. Why is the material considered “valuable” and “reusable”?

**Response: These materials have a market value and have potential reuse in various government and commercial applications. There is an expressed interest by third parties to acquire some of**

these materials in the near future. It is anticipated that other potential users of these materials will be found. Reusing this material helps protect the environment since recycling avoids having to bury the material in the earth. Its potential use as in down-blending with highly enriched uranium promotes nonproliferation goals.

6. If more potentially reusable material is shipped to PORTS, please identify the impacts/restrictions on other buildings and facilities at the site (in the context of production reuse).

**Response:** Should an alternative involving the PORTS site be selected, the UMG Program commits not to exceed the storage capacity of the existing UMG facility. As uranium in the inventory is dispositioned, additional uranium materials in the UMG inventory at other DOE sites could then be stored at PORTS on an interim basis. Thus, there should be no impacts or restrictions on the other buildings and facilities.

7. Please identify the method of shipment, mode of transportation, and route(s).

**Response:** Routing was calculated using the Transportation Routing Analysis Information System (TRAGIS) with two modes being considered—all shipment by truck and shipment by rail where appropriate with all other shipment by truck (termed the “truck/rail option”). See Appendix B for more details regarding routing assumptions and calculations.

8. What guarantees will the local community receive regarding the ultimate disposition date?

**Response:** DOE will attempt to disposition the uranium materials as quickly as reasonably possible and is committed to making periodic reassessments of materials in storage.

9. Please provide the proposed schedule of re-classification to ensure the material is reusable, marketable, and not deemed a waste.

**Response:** The UMG Program is proposing a review and documentation of material assessment not to exceed 5 years.

10. What happens to the material if it is subsequently determined to be a waste?

**Response:** It will be handled and disposed as a waste.

11. Please identify the markets for this material.

**Response:** The potential markets are discussed in Section 2.3.8. They include commercial processing and domestic sales to commercial nuclear vendors for the manufacture of nuclear fuel for commercial nuclear power plants, maintenance of a strategic reserve, down-blending of HEU in conjunction with arms reductions treaties (with the resulting LEU available for use in commercial nuclear power plants), use by research facilities, other government agencies and foreign sales.

12. When did the DOE preferred option first receive consideration?

**Response:** During the internal DOE scoping process for this proposed action several alternatives were formulated including an alternative for Interim Consolidated storage at a Single DOE site. Recent successful DOE experience at PORTS in storing the Fernald and Hanford uranium materials suggested that PORTS would be the preferred site under this alternative.

13. How would the importation of the material affect current clean up project? Future D&D activities?

**Response: No impact to cleanup or D&D activities is anticipated.**

14. How many permanent jobs are associated with this project? Newly created full-time permanent positions with the DOE preferred option?

**Response: The number of permanent workers (and initial construction workers) is shown for each site under each alternative in Chapter 4. See specifically Tables 4.3, 4.6, 4.9, 4.13, 4.16 and 4.19. For the Interim Storage at a Single DOE Site, the analysis performed in the PEA assumes an additional 168,000 ft<sup>2</sup> of space would need to be upgraded. As shown in Table 4.3, this results in 9 new permanent workers at PORTS (and 210 temporary construction workers). This assumes upgrades of buildings to increase effective storage space. However, as noted in response to comment #4, the UMG Program has decided to limit storage to the existing UMG storage facility. Therefore, permanent workers shown in the table would be significantly less.**

15. Please identify the community benefits associated with the importation of this material to PORTS.

**Response: This proposed action would continue to use the uranium-experienced and trained work force at PORTS. PORTS, with the uranium conversion plant and UMG activities, would be considered a multipurpose site versus a closure or DoD site.**

16. Will the full proceeds, including applicable taxes, of the sale of this material be returned to the community?

**Response: Proceeds will be used to cover costs incurred by the sale of the material, salaries, handling, and shipping at the PORTS site. Surplus would be returned to the U.S. Treasury as required by law.**

17. Will the DOE utilize the designated CRO for disposal/sale of this material?

**Response: Current plans are for the UMG to sale/disposition this material.**

18. Define temporary storage.

**Response: As stated in Section 2.3, DOE proposes to implement a long-term (greater than 20 years) management plan for its inventory of potentially re-usable LEU, NU and DU. Six interim storage alternatives are considered. Each of these alternatives also has associated with them the disposition of these uranium materials. Thus, the action will cover a greater than 20-year period. Further, this PEA does not provide for permanent storage at Portsmouth.**

19. Assuming there is a market for this material, is there a prohibition or moratorium that would prevent or affect its sale?

**Response: Under the disposition options discussed in Section 2.3.8, commercial process/domestic sales, transfer to research facilities and transfer to other government agencies can proceed in compliance with existing laws and regulations governing such sales or transfers. Before these materials can be sold, a Secretarial Determination is required to evaluate the potential for adverse impact on the market.**

20. Does USEC have any need for any of this material?

**Response: No. USEC uses UF<sub>6</sub> for their Paducah enrichment operations, which is not in the scope of the PEA.**

21. Has the DOE considered transferring ownership of any of the material to USEC?

**Response: USEC cannot use this material in its current form. USEC uses UF<sub>6</sub>, which is not in the scope of this PEA.**

22. Will additional security be needed at PORTS if any of the material is imported?

**Response: DOE will review the security needs at PORTS should a decision be made to move these materials there. DOE is committed to ensuring appropriate security forces are maintained.**

23. Has DOE consulted with and sought the input of the Ohio Congressional Delegation regarding the importation of nuclear material to PORTS? If so, what was the outcome?

**Response: DOE has hosted several public meetings with attendance from members of the Ohio delegation. The delegation accepted the program and holds DOE accountable for maintaining interim storage in DOT-certified containers; not storing waste; and not receiving funding as part of the Portsmouth cleanup plan. DOE is obligated to honor the commitments for the UMG Program in the same manner as has been maintained for the Hanford, Fernald, and university materials received to date.**

24. Of the 158 sites currently storing the material, is there any more “reusable” or “potentially marketable” material being generated? If yes, will it automatically be transferred to the storage site chosen during this action?

**Response: The 14,200 MTU of uranium inventory is all this is addressed in this PEA. No other materials are being considered for consolidation.**

25. Has any of this material ever been classified as a waste?

**Response: No. All material is carefully screened prior to acceptance.**

26. Please identify all of the sites currently storing this material and provide a brief description of the material at those sites.

**Response: Table 2.1 provides the uranium management inventory (amount in MTU) at the various sites. Table A.3 gives some indication of types of uranium at some of the larger DOE sites. However, for security reasons the exact amount by type is not shown for all sites.**

27. Please explain the relationship (on page 3-2/Environmental Justice Section) between race, income and the decisions to store this material at any location.

**Response: DOE is required to determine if low-income or minority populations would be adversely and disproportionately affected by the proposed action. If this is the case then DOE must take this into consideration when making a final decision. There were no adverse environmental effects which would disproportionately affect low-income or minority populations for any of the alternatives considered.**

28. Please provide brief details on the nature of retrofitting/upgrade required at PORTS for the DOE preferred alternative.

**Response: The Uranium PEA analysis assumes 168,000 ft<sup>2</sup> of building upgrades. This would result in the receiving capability for loading/unloading needing to be improved. However, DOE is committed to using only the UMG storage facility. Some additional modification to the current storage facility may be required as well as continued upgrades for the UMG facility.**

29. Who will be used to complete retrofitting required at PORTS?

**Response: Prior to the start of retrofitting existing facilities or new construction (should that be required), a labor determination will be made to identify the work force that will be required to perform the work. This determination will take into consideration the type and extent of work to be performed.**

30. Who regulates the safe storage of the material at PORTS?

**Response: The program to ensure the safe storage of the uranium material at PORTS is administered by U.S.DOE.**

31. On behalf of the southern Ohio region, and before any decision on this matter is made, we respectfully request a meeting with the Secretary of Energy or his designee with authority to make decisions regarding this issue.

**Response: Comment noted.**

32. We believe this proposed action is contrary to our efforts, the stated DOE mission to reindustrialize, and the tireless efforts of our elected representatives in Columbus and Washington for productive, job intensive reuse of the PORTS facility in Piketon. Therefore, the SODI Board of Directors opposes the subject material being stored at the Piketon site. The residents of Southern Ohio desire projects that have recognizable value and benefit for the community. We want input into our future, the goals for the site, and new missions.

**Response: Comment noted.**

***Graham E. Mitchell***

***Chief***

***Office of Federal Facilities Oversight***

***State of Ohio Environmental Protection Agency***

33. During the meeting on June 4, it was noted that funding just became available to help with proper disposition of the uranium material currently stored at the Portsmouth facility and that additional funding would be needed to continue to find a new use for this material. Please state how US DOE intends to continue funding this program so that material will not be stored in perpetuity but rather shipped to other entities for re-use. US DOE must make funding this program a priority within each budget in order to continue disposition of the uranium material. Without proper funding, the necessary research to determine potential uses for this material cannot be accomplished. The cost for management and research for re-use of this material should not come from the budget for the clean up and remediation of the Portsmouth facility.

**Response: Funding for specific activities associated with disposition of material will continue to be requested as part of the annual budget process. Requests for this funding continue to be separate from funding requests for cleanup and remediation of the Portsmouth facility.**

34. Portions of the revenues generated from the Uranium Management Group should be maintained in Portsmouth to off set the cost of storing the material as well as cleanup activities.

**Response: Comment noted. See response to comment #16.**

35. Ohio EPA understands US DOE's goal to consolidate uranium materials to reduce costs and promote more efficient management of these materials. However, to really develop credibility, US DOE is going to have to prove that this material does have economic value and other companies or government agencies are interested in it. Uranium materials need to be leaving the site rather than just arriving for storage. US DOE should establish goals and commitments to stakeholders to remove a certain percentage of material per year. These commitments could be in the form of a letter of intent or other type of agreement with the State of Ohio.

**Response: Comment noted. The UMG is developing a disposition plan to move the material from the site.**

36. The draft EA noted that US DOE considers 20 years or greater to be interim storage. At what point within the 20 years will US DOE determine that this material is no longer of value and deem that it should no longer be stored but treated as a waste? What plan(s) does US DOE have to evaluate this material over the next 20 years to determine if it is of value? Because of past problems with storage of materials that later became waste, US DOE must make a commitment in the EA to establish a process where the inventory is reevaluated on a regular basis (3-5 years) to ensure that it still has economic value. Please refer to the comment above in regard to establishing an agreement with the State of Ohio to continually evaluate the material and remove a percentage of this material from the site each year. US DOE cannot continually accept material at the Portsmouth facility without establishing that the material is of economic value.

**Response: The UMG is developing a disposition plan to move the material off the site. A process to re-evaluate the material in order to make sure it is not waste will be incorporated into the disposition plan.**

37. US DOE mentions that disposition is a major function of this uranium management effort. US DOE must also include disposition as waste as an additional component of this effort. Over time, as US DOE reevaluates this material, some of it may no longer have economic value and US DOE should be able to disposition it as waste under this EA. US DOE must ensure that funding is available to remove the material that is no longer of economic value as a waste.

**Response: Text has been added to Sections 1.2, 2.3, and 4.10 to address potential waste streams. If material is declared waste, additional funding would be requested from the appropriate DOE Program.**

38. The material currently at Portsmouth was moved there in order for US DOE to meet its regulatory requirements at several other sites. US DOE-Portsmouth has a regulatory requirement to address contamination at the site per the requirements of the Ohio Consent Decree. Currently, the material stored on site is in a building, which sits upon and is adjacent to a groundwater plume, which is to be addressed during the next fiscal year. The storage of the uranium material may interfere with the overall



site clean up. Please state how US DOE will ensure that storage of the additional material will not interfere with the requirements of the Ohio Consent Decree to clean-up the site. US DOE should conduct environmental characterization of buildings to be upgraded to meet the potential storage needs for incoming material. This effort could avoid future disruption of uranium management efforts.

**Response: As noted in responses to comments #2 and #6, the UMG Program is committing not to exceed the storage capacity of the existing UMG facility. Thus, no conflicts with the Ohio Consent Decree are anticipated. No activities that conflict with planned or ongoing remediation are anticipated.**

39. Please state how storage of this material will not interfere with the other potential missions at the US DOE-Portsmouth site? For example, if Portsmouth were to become a D&D site, would it still be a good location for this facility? How does the storage of this material fit in with the current mission of Portsmouth to clean-up the current contamination at the site and potential re-use of the site for future industrial purposes?

**Response: PORTS is an active DOE site with a uranium mission. It is not anticipated that interim warehousing of these uranium materials would adversely affect DOE's ability to conduct its other mission requirements at the site nor would this action interfere with ongoing cleanup efforts.**

40. US DOE should evaluate the long-term storage of the uranium material at a facility such as the Nevada Test Site. The material could be easily obtained if it is determined to be of economic value and should US DOE determine that it is a waste the material may not have to be moved again for final disposition. Storing the uranium material in this manner may save the US DOE valuable economic resources.

**Response: The Nevada Test Site (NTS) handles some forms of nuclear waste for the Department. The uranium materials evaluated in this PEA are not wastes and would not be appropriate to be stored at the NTS.**

41. Please state if the material will be tested for evaluation of RCRA characteristics including TCLP prior to shipping and storing the material to ensure that it meets regulatory requirements? Prior to shipping US DOE should make this evaluation to avoid potential regulatory issues at the site. As you are aware this site is not permitted to accept any hazardous waste from other facilities, to do so would be a violation of the permit.

**Response: Uranium materials are evaluated prior to acceptance by the UMG for shipment. UMG does not accept any materials that are determined to be waste. Therefore, the RCRA/TCLP testing would be unnecessary.**

42. If additional buildings/space will be needed for this effort, US DOE should coordinate with SODI in an effort to make the best future use of buildings.

**Response: Should an alternative be selected involving the PORTS site, the UMG Program commits to using the existing UMG storage facility.**

43. US DOE should evaluate who the likely users of the material may be prior to shipment to Portsmouth. US DOE should avoid shipment of material over long distances for storage only to have the material re-locate to a user near its origin (e.g. shipping the material from the Hanford Facility to Portsmouth then back to a western user). Conducting this type of evaluation up front will save US DOE economic

resources as well as avoid potential risks associated with transportation of this material over long distances.

**Response: Comment noted.**

*Larry Scaggs  
Seal Township  
Pike County Ohio Trustees*

44. I am writing on behalf of the Seal Township, Pike County, Ohio, Trustees to oppose the DOE bringing in wastes from other sites to store at Piketon. The Piketon Gaseous Diffusion Plant is partially located in Seal Township. I am also a Board Member of the Southern Ohio Diversification Initiative.

**Response: The UMG has no intent to accept waste materials.**

45. DOE has called this waste a valuable material, but cannot explain how or why it is valuable. Furthermore, by bringing this waste to Piketon, 157 other sites will be cleaned up. We want to know why 157 other communities are more important than Piketon.

**Response: See response to comment #5. Since the uranium materials at all 158 sites listed in Table 2.1 are product and not a waste, the other 157 sites are not being “cleaned up.” DOE is attempting to consolidate the materials to increase efficiency and reduce costs.**

46. I do support projects that accelerate the cleanup of the Piketon site and provide a safe environment for our residents. The DOE should build and operate the DUF<sub>6</sub> plant and accelerate cleanup of the lands and buildings, such as the 340 acres SODI tried to get for economic development. These project benefit the community by creating jobs and cleaning up our environment. Storing waste here for 20 years does not.

**Response: Comment noted.**

*Teddy L. West  
Scioto Township Trustee*

47. I am a Scioto Township Trustee elected by the residents surrounding the Piketon gaseous diffusion plant, a member of the Southern Ohio Diversification Initiative Board of Directors, and owner of property adjoining the Piketon gaseous diffusion plant. I am opposed to the storage of uranium waste that is described as “reusable material” in the draft programmatic environmental assessment DOE/EA-1393. As a neighbor of the plant and representative of the people surrounding the plant, I do not want our community to become DOE’s dumping ground. How can you tell our community that the waste is valuable material, yet you can tell the other communities that the material is a waste and they are now cleaned up? As a SODI Board member and Scioto Township Trustee, I support projects that will benefit our community by providing jobs and a safe environment for our people. We want DOE to accelerate cleanup, building the DUF<sub>6</sub> plant, transfer land to SODI, and bring new enrichment technology to Piketon.

**Response: Comment noted. The uranium materials evaluated in this EA are potentially re-usable and, thus, valuable materials. They are not wastes.**

**Gilbert D. Drexel**  
**Manager of Projects**  
**Portsmouth Site Office**

48. Sec. 1.1 (“Purpose and Need for Agency Action”, pg. 1-1). We suggest that the paragraph be revised by adding a new sentence (shown in *italics*), so that the paragraph reads as follows:

“The U.S. Department of Energy (DOE) proposes to implement a comprehensive management program to safely, efficiently, and effectively manage its potentially reusable low enriched uranium (LEU), normal uranium (NU) and depleted uranium (DU). *Uranium materials which are presently located at multiple sites are to be consolidated by transporting the materials to one or several storage locations, to facilitate ultimate disposition.* Management would include the storage, transport, and ultimate disposition of these materials.”

**Response: Text added as recommended.**

49. Sec. 2.2 (“No Action Alternative”, pg. 2-9). In the last sentence in the paragraph, suggest changing “disposed” to “dispositioned”.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

50. Sec. 2.3 (“Proposed Action”, pg. 2-9). In the first paragraph, we suggest that the 1<sup>st</sup> sentence be revised to create two sentences, to read, “DOE proposes to implement a long-term (greater than 20 years) management plan for its inventory of potentially reusable LEU, NU, and DU. Uranium materials which are presently located at multiple sites are to be consolidated by transporting the materials to one or several storage locations, to facilitate ultimate disposition.”

**Response: Text changed as suggested.**

51. Sec. 2.3 (“Proposed Action”, pg. 2-9). In the third paragraph, suggest revising the first sentence to read, “DOE must determine the safest, most effective, and most efficient approach for the consolidation and storage of this material.”

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

52. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. The 1<sup>st</sup> paragraph currently reads as follows:

“Normal operations result in no more than negligible acute or chronic consequences and risk at any site under any storage alternative or disposition option. Environmental impacts associated with normal operations vary substantially from alternative to alternative and, occasionally, by site within a given alternative. General handling accidents result in no more than negligible acute or chronic consequences and risk at any site under any storage alternative or disposition option. Chronic human health and ecological consequences and risk are negligible to low for all sites under all alternatives. The highest transportation consequences are for alternatives that involve moving uranium materials to a western location, either to a commercial site or to INEEL.”

We suggest that this summary paragraph be reworded to more broadly discuss the PEA’s conclusions. The conclusion/summary as we see the overall PEA analysis is that there were none-to-minor impacts for all of the alternatives from the standpoint of environmental impact; negligible-

to-low impacts from the standpoint of facility accidents (fire and seismic) for all the alternatives; while transportation effects for the alternatives generally reflected the extent of material transport associated with the alternative being analyzed. The overall conclusion is that potential impacts appear not be significant for any of the material consolidation alternatives which were analyzed.

**Response: Text in the Summary and Conclusions in the PEA has been modified. Should DOE determine that a Finding of No Significant Impact (FONSI) is warranted, the FONSI will be where “significance” of impacts will be discussed.**

53. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. We also suggest that discussion be added to the paragraph to summarize the reasons for proposing the PORTS option, given that at least one other option (i.e., the partial consolidated storage at several DOE sites) is forecast to have a less expensive construction cost. The reasons for proposing the PORTS option, are that a single consolidated storage location affords greater flexibility and ease of future disposition of the material, and reduces the overall expected future cost for facility surveillance & maintenance (S&M) and material accountability/material S&M, than if the material was at several locations. These benefits outweigh the potentially greater up-front renovation/construction costs.

**Response: Comment noted. The focus of the PEA is to address the potential environmental impacts associated with each of the alternatives considered. The PORTS site due to the existence of sufficient storage space to accommodate the entire uranium inventory under consideration has the least environmental impacts of a single consolidated storage site. DOE can consider factors in addition to environmental impacts when making an agency decision. In addition to those noted in the comment, PORTS has a work force trained in handling uranium materials and a very recent, successful experience in storing uranium materials from the Fernald and Hanford sites.**

54. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. Consideration should be given to adding an overall summary table (example attached).

**Response: Comment noted.**

55. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. The statement that “environmental impacts ...vary substantially from alternative to alternative” appears inconsistent with the analysis, which indicated that for all the alternatives, the environmental impacts were negligible, minimal, or at most minor. “Vary substantially” seems to imply that there are significant impacts, when the analysis says there were none or minimal.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

56. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. The statement that “General handling accidents result in no more than negligible acute or chronic consequences...” appears correct, based on the analysis. However, “general handling” is part of “normal operations” – which from the 1<sup>st</sup> sentence have no impacts. It is unclear as to why the extra emphasis is being given to the impacts from “Normal operations”.

**Response: The PEA addresses both accident conditions and normal operations (meaning those situations and activities in which accidents are not occurring).**

57. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. The paragraph omits discussion of the negligible-to-low risk associated with facility accidents (fire and seismic).

**Response: Text added to Section 4.11.1.**

58. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. The 3<sup>rd</sup> paragraph currently reads as follows:

“In addition to surface contamination, radiation dose from the stored uranium materials can be expected. Dose rates from any single stored container are no more than 3 to 4 mrem/h. The dose rate at a distance of 0.3 m (ft.) from a container is about 1 mrem/h, and the dose rate at a distance of 6 m (20 ft.) is < 0.5 mrem/hr (approximately the same as normal background radiation doses). These dose rates are not affected by stacking the containers, because the containers and the materials themselves provide substantial shielding. These dose rates are considered negligible to any receptor (facility worker, co-located worker, or public).”

Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. Suggest specifying whether the “3 to 4 mrem/h” dose rate is “on contact”. Also, we suggest to citing the basis for indicating the dose is 3 – 4 mrem/h maximum.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

59. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. Based on calculations, a dose at 6 m (20 ft.) would be < 0.05 mrem/hr. Suggest using “<0.05 mrem/hr” – rather than “<0.5 mrem/hr.”

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

60. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. It is unclear as to what the information in the parenthesis – “(approximately the same as normal background radiation doses)” refers to. If what is being referred to is 0.5 mrem/hr, this would not seem to be “approximately background”, as 0.5 mrem/hr at 2000 hrs/year would result in 1 rem/yr., which exceeds background. On the other hand, if what is being referred to is 0.05 mrem/yr, then this does more closely approximate background.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

61. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. The phrase “dose rates not affected by stacking the containers” is somewhat unclear. “Stacking” typically refers to one container on top of another. We would think that dose rate would be affected if there were multiple containers stacked on top of each other, or containers side by side. The next statement regarding containers providing shielding seems to be referring to the containers behind one another – not container “stacking”. Suggest clarifying whether we’re referring to “stacking” containers on top of one another, or those behind each other. Overall, while there may be mitigation of dose from shielding, it would also seem that there could be dose contribution from adjacent or stacked containers.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

**The assumption is that the shielding (side-by-side locating of containers) cancels out the two-deep stacking of containers. However, for the purposes of calculating doses to the public, the more conservative assumption of no shielding is used.**

62. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. The conclusion that “these dose rates are considered negligible to any receptor” may be correct, but it is not clear from this paragraph how this is so, given the above comments.

**Response: Corrections and clarifications made in the Draft PEA hopefully make this clear.**

63. Sec. 4, “Consequences” – General. Consideration should be given in Sec. 4 (“Consequences”) to adding specific Appendix references so that the reader can easily trace the amounts given in Sec. 4 back to where the amounts were calculated and appear in the appendices. As an example, for the “transportation effects” amount shown in table 4.17, add a reference or footnote to indicate where these amounts are shown in Appendix B (“Transportation Analysis”).

**Response: Chapter 4 addresses the environmental consequences of the various alternatives. Detailed information supporting the chapter 4 discussion is contained in various appendices, to which the reader is directed for more detailed information.**

64. In Sec. 4 (“Environmental Consequences”), in the “Impacts” tables – tables 4.3, 4.6, 4.9, 4.13, 4.16, and 4.19 – the cost of upgrades appears in each table. This is referred to in each table as “construction/upgrades cost”. From the methodology (Sec. 4.1, “Methods”, 2<sup>nd</sup> paragraph, pg. 4-1), it appears that the intent of these cost figures is that they include not only the cost of construction/upgrades but also the cost of surveillance & maintenance (S&M). However, it is not clear that S&M costs – either facility S&M or material S&M (which would also include maintaining nuclear material control & accountability) – are fully included by this approach.

**Response: The cost numbers in the tables cited are for construction costs only. They represent a one-time impact occurring over a short period of time (assumed to be one year). As such these costs help demonstrate the socioeconomic differences among the various alternatives. They are used to estimate job creation and to quantify the effects of the action on the economic region of concern. S&M costs are not included; however, the number of permanent workers is estimated.**

65. Sec. 4, “Consequences” – General. It may be more appropriate to base facility and material S&M costs on the total square footage of storage space for the material – not just on the upgraded space. The conclusion that would likely emerge is that there would be a significant cost component associated with S&M, at each facility where material would be stored. Eliminating this duplicative S&M cost at multiple storage facilities would appear to be a strong supporting rationale for the proposed approach – consolidating material at a single DOE site. Consideration should be given to discussing these S&M costs and/or including S&M costs in the affect “impact” tables.

**Response: See response to previous comment.**

*Harry Rider*  
*Vice Chairman*  
*Pike County Board of Commissioners*  
*Waverly, Ohio*

66. This proposed action raises numerous concerns. Specifically, safe transportation concerns, and security of all material at the Piketon Plant is in question. Health of workers, residents and environmental safety issues are also of major concern.

**Response: Comment noted. Transportation, facility accidents, and normal operations have been evaluated for all alternatives with risks to workers and the public identified.**

67. The perception of Pike County, our home, being a national dump site for the governments excess waste is appalling, to say the least.

**Response: Comment noted. The uranium materials evaluated in this PEA are not wastes but potentially reusable materials.**

68. This project has *no* financial, environmental, education or social benefits to Pike County and its people. For these reasons, I am very much opposed to bringing any material to Piketon for storage.

**Response: Comment noted. To date approximately \$5.7 million dollars have been spent at Portsmouth for previous uranium management activities. It also provided five direct jobs and numerous indirect jobs for the area.**

*Tom Reiser*  
*Vern Riffe, III*  
*Opal M. Spears*  
*Scioto County Commissioners*

69. Whereas, the Scioto County Board of Commissioners believe the storage of this excess uranium and the marketing of these materials over a 20+ year time frame will have a negative effect on our current and future marketing of the PGDP and GCEP sites for re-use and on the marketing of industrial sites for new business development in south central Ohio.

**Response: Comment noted.**

70. Whereas, the Scioto County Board of Commissioners also have a matter of concern over the downgrading of security forces at the PGDP in recent years.

**Response: Comment noted.**

*Lee A. Barclay, Ph.D.*  
*Field Supervisor*  
*U.S. Fish and Wildlife Service*  
*U.S. Department of the Interior*

71. The draft PEA does not include copies of correspondence requesting informal Section 7 consultation with U.S. Fish and Wildlife Service (Service) Ecological Services Field Offices in Ohio, South

Carolina, or Idaho. Service personnel have reviewed the information submitted and offer the following comments relative to the PGDP in McCracken County, Kentucky and the Oak Ridge Reservation (ORR) in Roane and Anderson Counties, Tennessee, for consideration.

**Response: DOE sent letters requesting informal consultation to subject USFWS offices on May 20, 2002. Copies of these letters and letters of response have been added to Chapter 7.**

72. The description of Federally endangered and threatened species present in the vicinity of PGDP (Section 3.2.5) generally reflects information provided by this office to DOE on February 23, 2001. The evening bat (*Nycticeius humeralis*) does not currently have Federal protection pursuant to the Endangered Species Act.

**Response: Text in 3.2.5 was modified.**

73. According to our records, the following federally listed endangered species are known from or have the potential to occur within the project impact areas on the ORR:

gray bat	<i>Myotis grisescens</i>
Indiana bat	<i>Myotis sodalis</i>
pink mucket	<i>Lampsilis abrupta</i>

We recommend that qualified biologists assess potential impacts and determine if the proposed ORR alternative may affect the species. We recommend that you submit a copy of your assessment and finding to this office for review and concurrence. A finding of “may affect” could require the initiation of formal consultation procedures.

**Response: Text in Sections 3.3.5 and 3.4.5 has been modified to reflect information provided. Since the potential acreage to be impacted would be in the middle of already industrial sites, it is reasonable to assume the potential for impacts to the species noted above is virtually non-existent. A Biological Assessment was prepared and sent to your office under separate cover; it is also included as part of the agency correspondence in Chapter 7 of this PEA.**

74. Since the Portsmouth Gaseous Diffusion Plant has been tentatively selected as the preferred alternative storage location, we recommend that the ecological resources section of this draft PEA referenced above be modified to accurately reflect the current extent of knowledge regarding biological/ecological resources of the Y-12 and ETTP areas, including East Fork Poplar Creek, Poplar Creek, and the Clinch River.

**Response: See response to comment #73.**

75. Since the American robin (*Turdus migratorius*) was modeled in the risk assessment in Appendix C of this draft PEA and given the responsibilities placed on Federal agencies by Executive Order 13186, we believe it would also be prudent to include discussions regarding migratory birds.

**Response: The interior forest habitat required by many species of migratory birds has been evaluated for the Oak Ridge Reservation with particular emphasis on the lands surrounding the ETTP site (SAIC 2002, *Draft Land Use Technical Report*, June). The proposed action would not affect interior forest habitat and the bird species that utilize them at any of the DOE sites. Some migratory birds, such as the American Robin, use more open, often man-altered habitats. It is possible that new construction in the middle of these industrialized sites could affect the foraging and nesting areas for some migratory bird species.**



**James A. Brushart**  
**Chairman**  
**Pike County Board of Commissioners**  
**Waverly, Ohio**

76. In Pike County, we are trying to pick up the pieces and make economic development attractive. If we are made a dumping ground for the governments waste to be stored, this will severely hamper any possibilities of economic development in the future. Pike County would be recognized as a national dumping site for waste, thus creating a more negative image of Southern Ohio.

**Response: Comment noted. The uranium materials covered by the proposed action are potentially re-usable and would be stored temporarily until they could be dispositioned. These materials are not wastes.**

77. In closing, I ask you on behalf of thousands of Pike County Constituents, to please take your waste elsewhere. I challenge the Department of Energy to do something good for Pike County and its people. We certainly deserve much better treatment than what we have received in the past.

**Response: Comment noted.**

**H. E. King**  
**8339 SR 139**  
**Minford, Ohio 45253**

78. Please please don't let Washington and Cincinnati dump excess uranium at the Portsmouth Diffusion Plant in Pike County. Southern Ohio has a rate of more cancer here than any place of the U.S. We have fought for years to have it cleaned up. EPA says its safe one month and unsafe the next month. It is densely populated in this area. There are many other places to take it like Idaho Falls and Hanford, Washington and others more safe. We do not want it here and pray you don't dump it on us.

**Response: Comment noted.**

**Cindy Newsom**  
**2315 Grandview Avenue**  
**Portsmouth, Ohio 45662**

79. I am writing in response to the June 7, 2002, article in the Portsmouth Daily Times. I would like to strongly suggest that you find somewhere else to store your material (other than at the Portsmouth Gaseous Diffusion Plant). I support Rep. Ted Strickland when he said, "You can't trust them (DOE) on anything they've said to us. They've lied to us before." I do not think that using PGD Plant is in the best interest of our area – we have enough problems without needing dumped on with nuclear waste. I don't believe the DOE will "re-use" or re-sale the material. A dump site is a dump site.

**Response: Comment noted.**

***D. E. Culver***  
***878 Shawnee Road***  
***W. Portsmouth, Ohio 45665***

80. No! No! No! No more excess uranium or any uranium at Portsmouth Gaseous Diffusion Plant. We've had this killer here since the 50's. No More. The fish in Scioto River are covered with sores, the bottom feeders are already dead. The wells are contaminated. The trees are dying. People are dying – go to hospital in Columbus nurses ask "Where are you from?" Your reply "Portsmouth". Their response "Oh the Cancer Capital of the state."

**Response: Comment noted. The risks to the workers and general population from transportation and interim storage of these materials at each site, including PORTS, were determined in the PEA. The risks were negligible to low.**

81. You clean this killer up at Fernald and Hanford and ship it someplace else to contaminate another place. How stupid can you get? For years you've talked "Jobs" well you know what you can do with your "Jobs".

**Response: Comment noted.**

***Norman A. Mulvenon***  
***Chair***  
***LOC Citizen's Advisory Panel***

82. The CAP reviewers find the document poorly written and the alternatives presented in an unclear and confusing manner, such that the average reader cannot make an intelligent evaluation. It appears that no quality assurance was performed on this document prior to release for public comment. At the very minimum, the subcontractor, Science Applications International Corporation, should have read their own material for content and used the appropriate annotated outline to guarantee that all text material was included and properly organized to allow proper evaluation. At the maximum, all involved parties as listed on page 6-1 should have properly reviewed and vetted this document. The CAP's primary recommendation is that DOE retract the document and have it internally reviewed, rewritten, corrected, amended, and then re-issued for public comment.

**Response: Comment noted.**

83. The PEA lacks an Executive Summary.

**Response: A Summary and Conclusions section (4.11) summarizes many aspects of the PEA results. An Executive Summary is not required for a PEA.**

84. The preferred alternative – Portsmouth – is not stated until pages 2-10. Even then, it is unclear whether this is the preferred alternative of all alternatives or only of the DOE sites under consideration. The PEA should present the compelling rationale for the preference. The reasons listed are not "unique" as most are applicable to the Y-12 National Security Complex also.

**Response: Section 2.3.1 is the appropriate section in which to address PORTS as the preferred interim storage location. DOE's preferred alternative is to locate these materials at PORTS; thus, it is preferred among all the alternatives not just among the DOE sites. The combination of the characteristics listed in Section 2.3.1 makes PORTS preferred. The word "unique" has been deleted from the text in Section 2.3.1.**

85. The various alternatives are not numbered or consistently named in such a way as to easily identify them for comparison. The various alternatives also appear in random order throughout the document causing additional confusion for the reader. An example of this is the final interim storage alternative listed in Table 2.2 “interim partially consolidated storage based on physical form” which is apparently the same as “Interim Partially Consolidated Storage at Several DOE Sites” in Section 4.11.1, Comparison of Alternatives.

**Response: The order in which the alternatives are evaluated in Chapter 4 parallels the order in which they are introduced in Chapter 2. The reference to “One DOE site” in the alternative title has been changed to “a Single DOE site” to be consistent. The discussion in Section 4.11, “Summary and Conclusions,” addresses the alternative with the greatest potential for environmental impacts (Interim Storage at a Single Commercial Site) first and the alternative with the least environmental impact (No Action) last.**

86. There are errors or unexplained inconsistencies between the final interim storage alternative listed in Table 2.2 “interim partially consolidated storage based on physical form: and the unnumbered, unnamed table in Section 4.9 that shows the storage plan for materials based on physical form.

**Response: Table 2.2 has been corrected. The referenced material in Section 4.9 is intended as text not a table.**

87. NU in the acronym list is defined as normal uranium. The definition used in Appendix A, page A-iv is natural uranium. The terms “natural uranium” and “normal uranium” are interchangeably and randomly used throughout the EA text and appendices. This is confusing to the reader and technically inaccurate, as “natural uranium” is the proper term.

**Response: The definitions will be changed to reflect the following: Natural uranium, as found in nature, is unaltered isotopically with an isotopic content of 0.711%  $^{235}\text{U}$ . Normal uranium contains the same percent of  $^{235}\text{U}$  as occurs in nature, but the 0.711%  $^{235}\text{U}$  signature may have been attained by blending uranium of different isotopic compositions or by processing in a gaseous diffusion cascade.**

88. The missions of the various sites for storage were not properly considered.

- Portsmouth is no longer used as a gaseous diffusion facility and its future role may be limited to being one of the two sites for a conversion plant for depleted uranium hexafluoride (Paducah being the other site).
- The three sites at Oak Ridge are lumped together in Table 2.1 and Oak Ridge is the only designator listed in later tables. In reality, the three major DOE sites in Oak Ridge have separate missions and two of the sites are not suitable for the proposed storage mission. ETPP is a closure site, and DOE has stated an intention to transfer the site to other ownership by 2008. ETPP should not even be on the list of alternatives, in that there is no future DOE mission contemplated once the site is cleaned up and closed. ORNL is listed in Table 2.1, but then is not included in any of the analyses. As a national laboratory, it is a poor candidate for a storage site.

**Response: Section 2.1, “Background,” discusses the historical missions of the various DOE sites. It was noted (p. 2-2) that ETPP is undergoing reindustrialization, D&D, and environmental restoration. ETPP is a DOE site; DOE has not transferred the land. Thus, DOE believes that, under the NEPA, the ETPP would be a reasonable site. The intent of Table 2.1 is to show where the UMG uranium inventory is located; 1,445 MTU are located at the three DOE sites in Oak Ridge. Later in**

**the EA, DOE explains that both ETTP and Y-12 (but not ORNL) are considered as potential interim storage sites.**

89. Information is scattered and difficult to find in the PEA. For example, on page 2-3 it is stated that the uranium trioxide at SRS is not considered within the scope of this PEA. We don't learn why (that these oxides are not part of the UMG inventory) until page 4-21.

**Response: Text on page 2-3 clarified.**

90. The option of transportation by barge is not evaluated.

**Response: Comment noted. This option was not evaluated because it is unlikely that the material would be transferred by this mode of transportation.**

91. The PEA doesn't seem to focus on the most logical analysis of alternatives for interim storage. This would be the consolidation of uranium at sites with compatible enrichment forms or with potential future uses. Some examples:

1. Portsmouth and Paducah will both have facilities for conversion of depleted uranium hexafluoride to oxide or metallic forms. Either of these locations would be a logical choice for the national stockpile of DU.
2. Paducah has a continuing mission of gaseous diffusion enrichment of uranium for commercial nuclear fuel. It would be a logical location for the storage of LEU.
3. Y-12 has exceptional capabilities for handling and storing HEU, and could act as a repository for any of the forms, particularly those that are more reactive such as metallic uranium. Because proposals for future disposition of HEU include down-blending to a lower enrichment, Y-12 might be a logical place to store compatible forms that could be used for this purpose at a later date.

**Response: Comment noted. Each of these facilities was evaluated in the PEA.**

92. The transportation analysis relies too heavily on computer modeling without actual analysis of the existing roads. Portsmouth is not accessible by interstate and for this reason would be a poor choice for storage of all forms/enrichments, making it a hub for a major shipping campaign involving sensitive cargos. It is more logical to minimize transportation on secondary roads and express a preference for sites close to interstate highways or other major bulk transportation options (rail or barge). In particular, if multiple shipments of a particular form or enrichment to a variety of end users are likely, the preferred storage location should weigh access to good transportation routes more heavily.

**Response: Comment noted. The transportation analysis focused on the potential environmental impacts associated with shipment of the uranium materials.**

93. With so much uncertainty about end states, one wonders why DOE has undertaken an assessment at this time. It also makes little sense that DOE's huge stock of depleted uranium hexafluoride in cylinders – soon to be converted to a more stable chemical form – is outside the scope of the PEA.

**Response: Comment noted. An EIS is being prepared for this DUF<sub>6</sub>. The UMG inventory of uranium does not include UF<sub>6</sub>. Other forms of uranium that are included in the PEA have been addressed.**

***LOC/CAP Member***

94. I also find the document exasperating, in that information is either not there or hard to find. I haven't found the form the uranium is at the various sites. With so much uncertainty about end states, one wonders why DOE is bothering with an assessment at this time. Particularly when the gorilla of depleted uranium hexafluoride in cylinders appears to be outside the scope.

**Response: Information on the form of uranium at various sites is in Table 2.2, page 2-5, under the "Interim partially consolidated storage based on physical form" alternative.**

**The uncertainties associated with final disposition do not preclude the need for DOE to find a more efficient management plan for its UMG inventory in the interim.**

***Larry R. Hurley***

***(email)—no address or affiliation provided***

95. Feedback: I'd like to see this material stored at the Yucca Mountain site (along with all the rest of the nation's nuclear materials).

**Response: Comment noted.**

***Lee Poe***

***(email)-- no address or affiliation provided***

96. I am reading the PEA on uranium and I find that it doesn't include most of the uranium at SRS. Please provide me with the rationale on why the uranium selected was selected and why other uranium at DOE sites was not included? On the surface it sounds like the PEA should consider all of DOE's U. (Please note that this comment has been modified because of security concerns.)

**Response: The material selected for consideration is viewed to be high quality, stable material with a substantial volume for potential reuse.**

97. Why was UF<sub>6</sub> not covered in the EA?

**Response: It is outside the scope of the Department's analysis for this PEA. UF<sub>6</sub> is being addressed in an EIS.**

98. Was scoping performed on this NEPA document? If so, please send me the scoping document summary.

**Response: Scoping is not required for a PEA.**

***Kathleen E. Trever***

***Coordinator-Manager***

***INEEL Oversight***

99. In stating a need for this EA, DOE emphasizes increasing budget pressures, good stewardship of resources, and ensuring maximum cost-effectiveness. DOE does not, however, provide a clear

explanation of how its alternatives for moving materials around before deciding on their disposition addresses these goals. This explanation is essential to supporting a sound policy decision.

**Response: The consolidation of the potentially reusable DOE uranium material provides an opportunity to retain a valuable asset while supporting the critical mission of DOE nuclear facility closures. For example, in the case of the Fernald site, a sizable quantity of potentially reusable uranium had to be dispositioned in order to support the site clean-up schedule. Fernald's review of the options for disposition of this material concluded that ~ \$23M was saved in the shipment of the material to PORTS versus the site removal and burial option. In addition, Fernald estimated that if the PORTS option had not been available, the costs due to schedule delays may have exceeded \$75M. Each of the UMG activities to date, and future UMG activities to relocate potentially reusable uranium, have/will utilize a deliberate decision-making process.**

100. Although DOE may be able to "bound" impacts based on hypothetical disposition paths, the geographical locations for disposition of the various physical forms could form a discriminator among alternatives that require transport, facility upgrade or construction. If, for example, there may be future activities using materials at their current or nearby location, it probably does not make sense to "consolidate" them elsewhere.

**Response: DOE makes decisions based on the best information available at the time of an action. If changes occur in the future, previous decisions will be re-evaluated to determine if adjustments need to be made.**

101. To support a sound decision, DOE should also provide information as to whether other activities at the storage facilities in question would still require similar monitoring or upkeep regardless of whether the reusable uranium materials remain. To enable fair evaluation of the alternative for consolidation by physical form versus solely geographical approaches, DOE should also provide information as to how physical form can relate to ultimate disposition, as well as identifying any differences in interim storage needs.

**Response: DOE estimated the manpower required to monitor the storage sites. Under the No Action alternative, the current level of monitoring would presumably continue at the various sites. At PORTS the existing buildings proposed for storage, under several alternatives, would have some level of monitoring if none of these alternatives is selected and the buildings continue in their present state. The level of monitoring for present uses was not estimated but is assumed to be similar to the proposed action.**

**Regarding consolidation by physical form, DOE has received inquiries and expressions of interest in some of the uranium materials in the UMG inventory; however, there is not sufficient certainty in the final disposition paths to allow a detailed analysis.**

102. The document's simplified assumptions prevent much quantitative analysis, but do allow some qualitative comparisons.

**Response: Transportation risks, various accident scenarios, and socioeconomic impacts (including construction costs, permanent and temporary jobs, and acres potentially affected by new construction) have been quantified using a variety of assumptions documented in the PEA.**

103. The fundamental, outstanding question left by the EA, however, is to what extent the alternatives can achieve DOE's stated purpose of achieving management efficiencies.

**Response: The PEA addresses a portion of that question, namely what would be the expected environmental impacts of implementing the various alternatives. Estimates of construction costs are part of this analysis. DOE will also consider other costs, such as surveillance and maintenance, transportation, and facility upgrades, as well as other factors in reaching a decision on interim storage.**

*Richard Demming*

104. All references to aircraft impact as shown on page 4-1, last paragraph, last sentence. This suggestion is made after the 9/11 attack. Replace references with external events.

**Response: Reference to aircraft impact has been removed.**

*Carolyn Thomas  
Senior Project Manager  
Uranium Management Division*

105. Table 2.2, page 2-5 contradicts with page 2-11, Section 2.3.6. Please correct the Table to reflect the information in Section 2.3.6, which is consistent with Appendix A.

**Response: Table 2.2 has been corrected.**

*Steven T. Carter  
Executive Director  
Scioto County Economic Development Office*

106. The Scioto County Economic Development Office and the Scioto County Commissioners, along with U.S. Congressman Ted Strickland, are opposed to the siting of the 14,200 metric tons of re-usable excess uranium from other DOE sites that are proposed to be stored at DOE's Portsmouth Gaseous Diffusion Plant. Even though we are a rural/small city community, our region is densely populated. We believe there are other DOE sites that are much larger than our 3,700 acre site where these materials can be stored and marketed over time. We also believe the storage of these materials over a 20+ year time frame will have a negative effect on our current marketing efforts of the site for re-use and on the marketing of industrial sites for new business development in South Central Ohio.

**Response: Comment noted. More important than the size of the plant are the amount and availability of storage space and a trained/qualified workforce. PORTS has sufficient existing storage space to accommodate the entire 14,200 MTU inventory. PORTS is already storing approximately 4,500 MTU. However, as noted in the response to comment #4, the UMG Program commits to limiting use to the existing UMG storage facility.**

107. Another major concern has been the downgrading of security forces in both manpower and armaments of PGD's security forces over the last several years.

**Response: Comment noted.**

*W. Lee Poe, Jr. (Additional Comments—received after close of comment period)*

108. P2-1, 1<sup>st</sup> Paragraph. Broaden this paragraph to cover UO<sub>3</sub> and state why UF<sub>6</sub> is not included. This sets the stage for the NEPA document.

**Response: The information in this paragraph is general background and is not intended as a detailed list of what is included in the PEA. UF<sub>6</sub> is not part of the UMG inventory because the UMG is seeking uranium materials with minimal nuclear safety requirements. A PEIS was prepared for DUF<sub>6</sub>, and a separate EIS is being prepared to further address DUF<sub>6</sub>. UO<sub>3</sub> is included in the PEA.**

109. Table 2.1 on P 2-2 should be expanded to include other uranium materials stored for reuse or disposition.

**Response: Text acknowledges that other uranium materials are at several DOE sites, which are not part of the UMG inventory and are not part of the proposed action. They are addressed as appropriate under the cumulative impacts analysis but are not included as part of the tables referenced.**

110. P 2-3 states most of the uranium is in the form of uranium metal. Where is this covered in the EA? How much of the 14,200 MTU is metal. EA should provide a table that provides the breakdown of the inventory into its associated form.

**Response: Table 2.1 provides the uranium management inventory (amount in MTU) at the various sites. Table A.3 gives some indication of types of uranium at the larger DOE sites. However, for security reasons, the exact amount by type is not shown for all sites.**

111. In the fourth paragraph on P 2-3 the SRS inventory is described as contained in wooden boxes, cardboard boxes for metal and drums for LEU Oxide. I was never able to determine if the EA contained environmental consequences from repackaging of that inventory. Later the EA discusses storage of drums and steel boxes.

**Response: The impacts associated with repackaging are covered in Section 4.2 of the PEA.**

112. Figure 2.1 shows example storage of metal boxes and drum storage. This figure is unclear in the printed version of the EA. It is basically a black photo with a large white box in the center. When I looked at the electronic version, it was legible. Should be legible in all forms of the EA. The title of the figure should specify the multi-stack storage being discussed when the figure was called out.

**Response: Commented noted. The intent of the figure is to show the relative sizes of drums and boxes, which contain uranium materials.**

113. The No Action alternative described in Section 2.2 on P 2-9 should provide clarify the small site storage. How many sites are assumed to store this uranium and for how long? The last sentence says the uranium would not be dispositioned. In my mind this means very long term consequences and none were discussed in the EA.

**Response: The first sentence in Section 2.2 states that ongoing storage would continue at all existing facilities. The impacts of the No Action Alternative are discussed in Section 4.3.**



114. As already pointed out the scope of the EA needs be expanded to discuss the other uranium being stored and discusses in fifth paragraph on P 2-9.

**Response: Comment noted.**

115. The last paragraph on P 2-9 says the analysis associated with the action alternatives discusses the bounding assumption associated with disposition. There is very little additional information in the EA on the bounding assumptions.

**Response: The bounding assumptions are discussed in Section 4.10. Additional text has been added on waste streams.**

116. P 2-10 in Section 2.3.2 says that DOE has not selected a commercial site for uranium consolidation in this alternative but for analysis purposes, a western and an eastern site were selected for the transportation analysis. Does the selection of Utah and South Carolina maximize transportation consequences? The justification for this selection should be given a few more sentences of description to convince the reader that this assumption is reasonable.

**Response: The selection of these two sites for transportation analysis does not result in the absolute maximum distance. The sites are realistic possibilities and serve as a “reasonable worst case.” More text was added to Section 2.3.2.**

117. The alternative for interim partially consolidated storage by physical form described on P 2-11 in paragraph 2.3.6 calls for SRS to be the metal storage site. I could find no information to support metal storage at SRS. In my technical judgment, metal storage has much larger consequence than does storage of oxides. As I indicated in my earlier letter, metal has a unique hazard, not analyzed in this EA, of metal fire potential which is exaggerated in long-term storage.

**Response: Comment noted. We found that oxides have a potential greater than metal for environmental impact in the case of an accidental release (from a fire, etc.). Powdered oxides are readily transported to the atmosphere and, subsequently, to a number of potential receptors in a fire scenario.**

118. Paragraph 2.4 discusses DOE's belief that uranium storage is a government asset. Two sentences later it says DOE might declare other inventory a waste. This seems to be a two-forked statement. This paragraph should be rewritten to eliminate this apparently inconsistency. I would really like to know what it is saying. What makes some uranium a national asset and other uranium a waste product?

**Response: Section 2.4 states that the uranium materials in the UMG inventory and, thus, part of this PEA are potentially re-usable. Therefore, the alternative of addressing them as waste is not considered further. This statement recognizes the fact that DOE has other uranium materials, which have been legally declared as wastes.**

119. Section 3 discusses the affected environment at Portsmouth, Paducah, Y-12, K-25 (both in Oak Ridge), and Savannah River Site. There is no mention of the other sites that currently store some of the uranium or those planned as alternatives for possible storing and managing uranium within this EA. These sites should be discussed in this section, but probably not in the detail of the five major sites.

**Response: The affected environment of sites DOE is considering for interim storage is discussed in Chapter 3.**

120. The Method's section (P 4-1 in Section 4.1) says that 14 people are required for managing the uranium inventory. This seems like a low staffing level to manage 243,000 square foot of storage space with ~71,900 containers in storage. I could find no further information on what these personnel were assumed to do. If this uranium is a true national asset, it probably has the lowest surveillance staff of any of our national treasurers. The uranium management staffing should be reexamined.

**Response: The UMG staff would be primarily responsible for surveillance and maintenance, inventory tracking and related activities, and to some extent security. The UMG storage facility has been configured to require minimum staffing levels, and the storage of material has been established to ensure cost-effective service.**

121. In the fourth paragraph of Section 4.1, I find the statement "worst case assumptions ... are employed". As I have said, I do not think this statement is correct. One such statement is that 14 people can manage this uranium. I will point out other assumptions I do not think appropriate as I proceed with these comments.

**Response: Comment noted. See response to comment #120.**

122. The EA should analyze and present sabotage scenarios. These might range from theft of uranium (remember it is a national asset) for its value to those that would blow it up to disperse the radionuclides and cause bad publicity. Those 14 people would not be able to prevent either.

**Response: DOE considers the discussion of sabotage scenarios in a public document to be neither prudent nor wise. The Department addresses site security, including sabotage, for these materials, but details are not discussed in a public forum.**

123. The third paragraph on P 4-2 lists  $K_d$  units as L/kg. Please correct the units on this term.

**Response: The units have been re-evaluated and have been determined to be correct.**

124. P 4-6 Table 4-3 lists PORT upgrade cost as \$8.4M and the second paragraph says it is considered to be \$10.9M. Please correct all tables listing the earlier value. The other values in the table for PORT should also be corrected.

**Response: On page 4-6, paragraph 2, the \$10.9M refers to the PORTS construction costs if 125,000 ft<sup>2</sup> of space is built new instead of using all existing space and upgrading it. While existing storage space is available, it seemed prudent to indicate what impacts could be expected if, for some reason, not all of this space could be used. Also, see responses to comments #2 and #6.**

125. P 4-6. It is obvious that DOE from major sites other than PORTS and also at the minor site have not been consulted on this EA. I make this judgment based upon the many tables in this section have say space availability is unknown. This lack of communication with other DOE site personnel should be eliminated and the same level of knowledge applied for each site. The lead statement in the third paragraph on this page confirms the lack of communication.

**Response: All DOE sites considered for interim storage were consulted and specifically asked to provide information about existing space, which could be used for uranium storage.**

126. Table 4.5 (P 4-7), Table 4.7 and Appendix B need units added for the two columns giving transportation fatalities. Are these fatalities per year or per activity?

**Response: The columns for latent cancer fatalities and traffic fatalities are totals for all transportation required for a specific destination/alternative. Column headings have been revised to say “Excess latent cancer fatalities (total)” and “Traffic fatalities (total).”**

127. Section 4.7 on P 4-17 is a very weak analysis for disposition. As I indicated earlier in this set of comments and in my General Comments, the section talks about bounding conditions and impacts then makes an arbitrary statement that all they did was double the impacts of storage. If these are bounding, please explain how you know since no analysis was performed.

**Response: In Section 4.10, DOE states that a rough bounding of impacts would be to take the alternative with the greatest environmental impacts and double them; however, several factors would lessen this effect. These are then discussed in detail in the subsections that follow.**

128. Third bullet on P 4-19 gives the \$8.4M that was later changed to \$10.5M. (See P4-6 comment.)

**Response: See response to comment #124.**

129. Combine the fourth and fifth bullets on P 4-19. They seem to be saying the same thing.

**Response: Comment noted.**

130. Expand the sixth bullet. It is not clear where the judgment came from. It says that commercial sites are less efficient than DOE sites. I continually hear from DOE that they want to do things using commercial approaches since it is more efficient than the DOE system. At best what does this add?

**Response: It is assumed that a commercial site would have to build the entire 243,000 ft<sup>2</sup> of storage space to accommodate this material. Thus, impacts from construction would be the greatest at commercial (and the PDGP) sites.**

131. Section A.2 describes overpacking all containers prior to shipping. Where are the environmental impacts of this action included in the EA. If they are not included, why not?

**Response: See Section 4.2.**

132. The last sentence on P A-2 says worker dose commitment from surveillance and maintenance of this uranium is expected to be less than detectable. I doubt this is a correct statement. The top paragraph on P A-4 goes on to describe the expected radiation dose from containers. These doses were detectable. The last sentence of this top paragraph goes on to make an unsupported conclusion. It says “these dose rates are considered negligible to any receptor”. What about doses to workers who purified this uranium and developed illnesses that DOE (or the government) is now paying for?

**Response: The intermittent nature of surveillance and maintenance activities, combined with a dose rate at 6 meters, which approximates background, would result in dose rates that are considered negligible.**

133. Second paragraph in Section A.3.1 on P A-4 uses a slang approach (1E-6) with no description of what is meant by that notation. Use the proper scientific notation then describe what it means.

**Response: Comment noted.**

134. As I read Section A.3.1.1 on P A-5, particularly the last couple of sentences, I do not know what conclusion you are trying to make.

**Response: Comment noted.**

135. Section A.3.1.2 on PA-6 describes a single container breach as being a bounding accident. This same event could breach multiple containers on adjacent pallets. Why then is a single breach bounding?

**Response: Section A.3.1.2 states that single-container handling accidents are bounding for the accident category “container breach” because these events dominate risk to workers. A container breach is not bounding for all types of accidents.**

136. The next to last sentence in Section A.3.1.2 says that container breach is insignificant compared with a fire. Multiple drum ruptures are speculated above. The logic that shows fire is more significant than rupture should be clearly made or both analysis given.

**Response: Some fires can result in multiple containers breached whereas a forklift rupture or dropping of a drum would more likely result in a single container rupture. Also, fire provides a mechanism for airborne transport once containers are breached. Thus, a multiple container breach with fire to mobilize the uranium materials is a more serious accident than a single or multiple container breach without an associated fire.**

137. The basis for the frequencies given in Table A.7 should be given.

**Response: This is discussed in Section A.3.1.3.**

138. How can the frequencies for tornadoes at all sites be the same as shown on Table A.7? I likewise have the same comment for earthquakes.

**Response: The frequencies in Table A.7 are not the frequencies of earthquake or tornado occurrences at the DOE sites. These vary from site to site. Frequencies shown in Table A.7 indicate the threshold earthquake or tornado loading for which damage is expected from the event. The frequencies are the same because, for example, a higher-intensity earthquake at Paducah occurs at the same frequency as a lesser-intensity earthquake at Oak Ridge.**

139. P A-7. Describe your judgment of how long seismically damaged facilities will be left in the damaged condition while personnel repair other higher risk damaged facilities. This duration of exposure to the elements should be included in the analysis for these facilities.

**Response: Because the vast majority of the materials released would occur during and/or immediately after the seismic event, the assumptions used in the analysis will bound the risks. No estimate of how long damaged facilities would remain damaged is included in the analysis. It should be noted that depletion of the initial source term occurs over time, so the assumption of all material released during the initial phase of the event is conservative.**

140. P A-7 second paragraph references reinforced concrete and structural steel debris as fire mitigation. All storage facilities will not be constructed of concrete thus the concrete and steel should not be relied upon as a fire mitigator. It is unclear from the text of that paragraph how much reliance is afforded by this building material.

**Response: As noted in Section A.3.1.3, following a direct seismic event, a number of small fires may occur. No building structure is assumed to remain, and fire suppression systems are assumed to be**

totally destroyed. The buildings are assumed to be constructed of steel and concrete, and these materials, unlike wooden structures for example, would not readily support combustion. In addition, the debris and rubble act as shields to prevent the subsequent small fires from spreading and involving the entire stored material inventory.

141. The second paragraph on page A-8 seems to use the MAR yet MAR is not given on Table A.8.

**Response: Your observation is correct. In order to reduce the complexity of the tables, the MAR and release factor values were not repeated in Table A.9.**

142. The DRs in Table A.8 seem to be totally subjective. Support for the values used should be provided in this appendix.

**Response: References for release factors are given in Section A.3.2.**

143. The  $ARF \times RIF$  values given in Table A.8 should be referenced.

**Response: References for release factors are given in Section A.3.2.**

144. Add a section describing storage facilities (similar to that given in Section 2 of the EA) to this appendix on page A-9 to support the analysis given in Section A.3.3.2.

**Response: Comment noted. The addition of this information will not affect the intent of the document.**

145. U metal is pyrophoric and when ignited, I would expect that all of the metal would be at risk. U fires are not easily extinguished.

**Response: Comment noted. The degree to which uranium material ignites depends on several factors, including the physical form. For example, uranium metal shavings are easily ignitable, whereas uranium metal in large ingots is not. This factor is included in the assignment of DR, ARF, and RF values for fires involving metals.**

146. The source terms discussed in the second paragraph are very subjective. Add information so your reader will understand why the values were picked. References, showing why values were picked, are always beneficial.

**Response: References for many factors have been provided. See responses to comments #142 and #143, for example.**

147. The frequency of facility fires is stated to be unlikely. Be more quantitative. Is this one chance in 10 years or a frequency of 0.1/year. My judgment says it is a frequency of  $10^{-4}$  to  $10^{-6}$  is unlikely. DOE experience of fires is probably in the range of  $10^{-2}$  to  $10^{-3}$  and with the number of facilities described in this EA fires can be expected to occur during the time interval for this uranium storage.

**Response: DOE guidance for accident analysis states that qualitative estimates of frequency are sufficient and that a frequency range of 1E-2 to 1E-4/year is unlikely. This frequency applies independently to each storage location and alternative; it is not additive.**

148. In Section A.3.3.3 include the long-term consequences as well as short-term consequences. Material lost from containment during a seismic event will probably remain in an exposed condition (to the environment) for weeks and some of it will be transported to surface streams before the low priority uranium cleanup can be accomplished.

**Response: Comment noted. See response to comment #140.**

149. Identify the basis for the 10% and 15% of drums forecasted to be dislodged from the storage array in the first bullet on P A-9.

**Response: These assumptions are documented in the cited reference (Hand 1998).**

150. The third bullet identifies 25% of the material spilled. What is the basis for value? If spilled what is assumed on cleanup and when.

**Response: These assumptions are documented in the cited reference (Hand 1998).**

151. Again metal fires should be considered in a seismic event consequences.

**Response: Comment noted. See response to comment #145.**

152. The second line on P A-10 uses the term conditional probability to reduce the risk from seismic event by a factor of 10. What is the basis for this factor of ten reduction. The arbitrariness of all of these values leaves the EA reader questioning the analysis. Try to support conclusions and not make them so arbitrary.

**Response: Comment noted. As noted on page A-10, this value is an estimate.**

153. Near the middle of P A-10, duration of 1 hour is assumed for airborne release. The longer-term aspects of resuspension of released material should be included for the time the material has not been cleaned up.

**Response: Comment noted. See response to comment #139.**

154. The third bullet, on P A-13, assumes the facility workers will be exposed for 10 seconds. This seems very short for workers who are trying to mitigate consequences or to a worker who is hurt from a seismic event and cannot escape.

**Response: The assumption of 10 seconds is standard for facility worker response to an accident (i.e., “see and flee” policies). Subsequent recovery actions are not included in accident analysis evaluations, as accident response personnel are adequately protected to respond safely to events.**

155. The conclusions given in Tables A.11 and A.12 that facility workers will receive negligible dose and maximum consequence seems inconsistent with co-located workers and the public receiving doses. Calculated values should be given in the Appendix so reviewers can make their own judgment as to its significance.

**Response: Comment noted. See, also, response to comment #154.**

156. Appendix C is very difficult to understand. It is full of technical terms and it is not written so it can be understood by a technically trained stakeholder and I do not think it is of any value to a decision maker or to the general public.

**Response: Comment noted. In order to provide a complete analysis, an assessment of chronic risks to humans and ecological receptors of airborne uranium deposited on soil and surface water and from water to sediment is provided in Appendix C.**

157. On P C-2, in Section C.2.1.1, need to say why Stability Category F was assumed.

**Response: Stability Category F was assumed because it is the most stable (results in least mixing or dilution) and, thus, provides the most conservative risk estimate. Text was added to Section C.2.1.1.**

158. In Section C.2.2.2, why was the assumption made that uranium was deposited in a pond with an average depth of 2 meters? It would seem to me to be worse to deposit it in surface creeks that allow easy access to animals and other ecological system varmints.

**Response: Moving water, such as creeks, permits much more mixing (dilution) than a pond; thus, assuming standing water is a more conservative approach, which results in a greater potential for ecological impacts.**

159. Section C.3, on P C-9, makes the judgment that residential exposure is considered implausible under current site conditions. It is unclear that this is a reasonable judgment. Obviously if one can limit exposure, the consequence of this EA are negligible. This condition should be proven by reasonable analysis not assumed away.

**Response: The risks to residents were calculated and documented in Section C.3 even though such exposure is unlikely. Risks were not “assumed away.”**

160. The table set up of the summary tables (Table C.20 and C.21) is poor. I presume that the last three columns are Radiation Exposure. Likewise three columns are Chemical Exposure. Fix the tables so this differentiation is clear. Add units to the table.

**Response: Table headings have been clarified per comment. Hazard quotients (HQs) are unitless.**

161. My conclusion is that calculated data should be given in tables in the appendix so the reader can see the results of calculations. Information in the Appendix should not be decided to be low or negligible. That conversion is not appropriate here nor in Section 4 until the analysis is being summarizing. (This EA did not summarize the analysis in Section 4 nor did it have a Summary).

**Response: The numerical definitions of high, moderate, low, and negligible risks are presented in Section C.3.5. The summary tables in Appendix C use these word definitions instead of specific numerical values to aid reader understanding.**

**R. L. Huskin**  
**Savannah River Operations Office**

162. **Page 2-1**, Section 2.1, 2<sup>nd</sup> Paragraph, 9<sup>th</sup> Line; The stated typical percentage of <sup>235</sup>U in depleted uranium (DU) does not agree with the value shown in Table B.1 on page B-3. Page 2-1 says DU typically contains 0.25% <sup>235</sup>U while Table B.1 says 0.10%.

**Response: The values cited in Table B.1 are the values used in the analysis. While the percentage differs from the typical DU of 0.25%, <sup>235</sup>U use of 0.10% would produce only a very minor difference in the results. This was verified by re-running the analysis using 0.25% U235.**

163. **Page 4-6**, Section 4.4.1, 3<sup>rd</sup> Paragraph; Paragraph states “DOE has not identified existing buildings at (sites other than PORTS) to accommodate these additional uranium materials at this time. Therefore, for analytical purposes, it is assumed new storage space would have to be constructed.” This begs the question of has DOE even made any attempt to identify such existing facilities at sites other than PORTS. Without any such attempt, it would appear any estimates, such as those shown in Table 4.3, would be wholly inaccurate and deliberately skewed in favor of PORTS. This hardly appears to be an unbiased assessment of the adequacy and availability of sites about the DOE complex.

**Response: See the response to comment #125.**

164. **Page 4-20**, Section 4.12, 3<sup>rd</sup> Paragraph, 1<sup>st</sup> Sentence; As written, the statement leaves the impression that uranium shipments will increase traffic accidents and fatalities because the cargo is uranium, rather than clearly stating any increase in such events would simply be the result of additional vehicles on the nation’s roads, regardless of cargo.

**Response: Text cited has been modified to clarify this point.**

165. **Page 4-20**, Section 4.12, 3<sup>rd</sup> Paragraph, 3<sup>rd</sup> Sentence; I don’t believe this can be substantiated with the data presented. To state there would be an increase in LCFs to workers and the public from this transportation program, one must calculate both the potential LCFs resulting from the program and the LCFs potentially suffered by workers in the vicinity of the materials in a no-action alternative. I didn’t see any such estimate for the no-action alternative in Section 4.3 nor any table presenting estimated LCFs from incident-free operations such as presented in Table 4.1 for accidents. Therefore there is no comparison of the no-action alternative to the other scenarios to determine if there was a net increase or decrease in LCFs.

**Response: The text, as written, indicates that the increased LCFs are due to exposure during transport. Since the uranium materials would be stored somewhere under any alternative, including No Action, the transport risk is in addition to storage risks.**

166. **Page A-12**, Table A.10; The values, in meters, for the distance to site boundaries for several sites such as INEEL and SRS seem inappropriately low. Are values of 526 meters and 727 meters correct for INEEL and SRS, respectively? While not familiar with the assumed locations for the materials at these sites, I can say several sites, such as INEEL and SRS are very large, with site centers greater than 10 miles from their boundaries.

**Response: Because specific storage locations were not provided for several sites, a location central to roads, warehouses, and other similar facilities was postulated. Actual distances may be greater; however, the shorter distances used in this analysis are conservative.**



167. **Page B-2**, Section B.3, 8<sup>th</sup> Dot; I believe the estimated duration of 10 days grossly underestimates the likely transit time for 14,400 km. This would equate to an average vessel speed of 33 knots. I don't believe you'll find many freighters with such speed. The ones currently in use for transporting foreign research reactor spent nuclear fuel back to the U.S. typically are capable of only about 11-12 knots. Only about 1/3 of the apparent speed of the uranium carriers. If one were to state the distances may range from X to 14,400 km with an average of about 5,000 km, an average transit time of 10 days would seem much more reasonable.

**Response:** The text has been changed to indicate that 14,400 km is the maximum distance port-to-port. The dose to crew members is now stated in mrem per person per day to account for various distances of shipments.

168. **Page B-3**, Table B.1; See 1<sup>st</sup> comment concerning page 2-1.

**Response:** The values cited in Table B.1 are the actual values used in the analysis. See the response to comment #162.

169. **Page B-3**, Section B.3, 5<sup>th</sup> Dot; There is no basis provided for the assumption that 1% of accidents would result in release of radioactive materials. Most other stated assumptions appear to have a stated basis.

**Response:** The 1% value is a conservative engineering estimate. The only good test and modeling data that exist are for Type B spent fuel casks and TRUPACT-II containers, and those values range from 0.01% to 0.1%. Sandia has historically used, and currently is using, 1% for Type A and IP3 packages. It has been used in previous DOE NEPA projects [for example: DOE/EA-1290, *Environmental Assessment: Disposition of Russian Federation Titled Natural Uranium* (1999)].

170. **Page B-3**, Section B.3, Last 4 Dots; These are redundant, considering content of the last two dots on page B-2. They should be consolidated.

**Response:** The bullets were consolidated.

171. **Page B-4**, Table B.2; The Eastern Centralized Commercial Storage Site (Barnwell) is located on the SRS Site boundary. Why then, would their values for "Truck Only – Dose Risk" be so different; 0.0036 (SRS) verses 0.00206 (Barnwell)? The values for all other categories for SRS verses Barnwell are almost identical, as they should be.

**Response:** The Barnwell site was selected to represent the location for an eastern centralized commercial storage site since it has existing infrastructure and experience in handling these materials. Other locations in the eastern United States could have been selected. The actual storage location, should a commercial storage site alternative be selected, could be anywhere in the eastern United States. However, we concur with the logic presented in the comment that adjacent storage sites should have virtually identical risk results.

The values in Table B.2 are different because in selecting the nodes to use in the TRAGIS routing code, there are several SRS nodes from which to select and two nodes for Barnwell to choose from. Most likely, the nodes selected to run the analysis are not exactly at the Barnwell LLW site, and the SRS node is almost certainly not at the exact location of the material to be shipped or at the fence line adjacent to the Barnwell site. We used the same node for each origin and destination in all of the analyses. Differences in routing will result in differences in collective dose risks since the RADTRAN code allocates a population weighting factor to rural, suburban, and urban portions of a given route.

Neither routing results in appreciable risks due to transport; however, since we know that the Barnwell and SRS destinations are essentially in the same place, the reader can use the Barnwell route results in Table B.2 for both Barnwell and SRS destinations.

172. **Page B-7**, Section B.5, 2 Dots and last Paragraph; The last paragraph states the total number of shipments could not be estimated because the amount of material in each shipment may not be known. Without an assumption of the quantity of material in each shipment, how were estimates made of the average doses to the crewmembers? If the estimate is made based on the assumed dose rates on the drums as explained in Section 4.2 on page 4-3, I believe 159 mrem per crewmember per shipment, as stated here and at the bottom of page 4-18, is a gross overestimate. The potentials for such exposures would mandate implementation of a radiation protection program that, in turn, would find such exposures to not be ALARA.)

**Response: DOE concurs that the assumptions used were overly conservative and overstated the risk. Some assumptions have been modified (e.g., 2-hour exposure per crew member to material between 1 and 16 m, instead of 12 hours, and 4 mrem/hour instead of 6 mrem/hour to be consistent with packaging calculations). The dose rate is 1.8 mrem/hour per crew member.**

173. **Page C-12**, Table C.4; When using the values for Intakes in Table C.5, I can reproduce the various values for Dose in Table C.5 and Cancer Intakes in Table C.4, but I can't arrive at the same dose values shown for Cancer Risks in Table C.4. I am assuming the Cancer Risk values are a product of the CEDE derived from the Cancer Intakes and the appropriate risk values from ICRP-60 (i.e., 1 LCF per 2,000 Person-Rem for the "Resident" and 2,500 Person-Rem for the "Standard Worker". If this is the correct method, it appears the Cancer Risk values are too high by a factor of between 2 and 30. It appears as if the dose-to-risk conversion values vary greatly and range between 70 rem and 1150 rem instead of the expected values of 2,500 rem and 2,000 rem for workers and the public, respectively.

**Response: Cancer risks are estimated by multiplying the intake (pCi or pCi-yr/g) in Table C.4 by the cancer slope factor (risk/pCi or risk/yr/pCi/g) in Table C.7. For example, the risk to the Short-term Emergency Worker from ingestion of U-234 is  $8.8\text{E-}02 \text{ (pCi)} \times 1.58\text{E-}10 \text{ (risk/pCi)} = 1.4\text{E-}11$ . Slope factors are from HEAST, per standard risk assessment practice.**

174. **Page C-15**, Table C.7, Upper Table; The issue described above for page C.12 also applies here. Put another way, the Risk/pCi appears to be based on something other than the expected 2,000 or 2,500 (as appropriate) rem/LCF. For example, in the specific case of Inhalation (Risk/pCi) for Uranium-235+D, the stated value appears to be based on a risk-to-dose factor of 756 rem/LCF.

**Response: See response to comment #173. Slope factors are from HEAST, per standard risk assessment practice.**

175. **Page C-15**, Table C.7: It appears some of the footnotes are not shown beneath the table.

**Response: Table has been modified. The extraneous footnoting was removed.**

*John Owsley*  
*Director*  
*Tennessee Department of Environment and Conservation*  
*DOE Oversight Division*

176. Acknowledging that uranium wastes are not part of the scope of this PEA, the document should identify and address any waste streams associated with the re-usable uranium materials. The PEA should provide maps of probable transportation sources.

**Response:** Text in the PEA has been added to acknowledge waste streams associated with disposition or in the event product is later declared to be a waste. Since the waste streams are dependent on the specific end use, and these are only known in general terms, this was not evaluated in detail in the PEA. However, the many thousands of containers used to transport the uranium product would eventually become a waste stream. Either the containers are considered waste and disposed or they are cleaned for reuse, creating a waste stream from the cleaning operations. It is unlikely that the empty containers could be reused as is, except in very limited circumstances.

177. The PEA should provide maps of probably transportation routes.

**Response:** Transportation routes were identified for analysis purposes in the PEA using the TRAGIS routing model. Potential impacts from accidents and exposure were addressed in the PEA; however, for security reasons, DOE cannot publish map routes.

178. The state of Tennessee reiterates its position on not being willing to accept any materials designated for recycle/reuse without definite disposition pathways which may accumulate to long term storage or any waste that may require long term storage prior to treatment/disposal.

**Response:** Comment noted.

179. **Section 2.1 Page 2-1**, the typical end-use products are stated as metal or  $\text{UO}_2$ . On page 2-3, Fernald's largest inventories that fall within the scope of this PEA are stated to be in the form of metal and  $\text{UF}_4$ . The  $\text{UF}_4$  should be added to the statement on page 2-1 that defines the scope.

**Response:** The intent of the introductory paragraphs in Section 2.1 is to provide general background information on uranium, not to provide an exhaustive list of all uranium forms covered by the PEA.

**APPENDIX D.2 COMMENTS AND RESPONSES**

**DRAFT URANIUM MANAGEMENT PROGRAMMATIC  
ENVIRONMENTAL ASSESSMENT**



## APPENDIX D.2. COMMENTS AND RESPONSES

### **Response to Comments on the Programmatic Environmental Assessment for the U.S. Department of Energy, Oak Ridge Operations Implementation of a Comprehensive Management Program for the Storage, Transportation, and Disposition of Potentially Re-usable Uranium Materials (DOE/EA-1393)**

*Gregory L. Simonton*  
*Executive Director*  
*Southern Ohio Diversification Initiative*

1. Please identify any other potentially reusable uranium material/uranium feed currently located at PORTS.

**Response: Materials deposited throughout the cold standby and shutdown cells are a source of future potentially reusable uranium.**

2. What buildings would be used at PORTS for this project?

**Response: Due to security concerns, specific building locations cannot be identified in the PEA. However, should an alternative involving the PORTS site be selected, the UMG Program commits not to exceed the storage capacity of the existing UMG storage facility. This commitment to limit material within the confines of the existing UMG facility will further ensure that the disposition of material remains a priority. As uranium in the inventory is dispositioned, additional uranium materials in the UMG inventory at other DOE sites could then be stored at PORTS on an interim basis.**

3. What building(s) are included in the 450,000 square feet of available building space cited in the Draft Environmental Assessment (DOE/EA 1393)?

**Response: See response to comment #2.**

4. What other facilities would be required to support the DOE preferred option to consolidate all of the material at PORTS?

**Response: The PEA identifies the need for approximately 168,000 ft<sup>2</sup> of additional storage space. Assuming additional space is required, then with the exception of temporary use of roads and the equipment needed to offload and store the uranium materials, no other facility use is anticipated. However, in consideration of comments received, the UMG Program does not plan to use additional buildings at PORTS. DOE anticipates storage at PORTS will be limited to the current UMG storage facility.**

5. Why is the material considered “valuable” and “reusable”?

**Response: These materials have a market value and have potential reuse in various government and commercial applications. There is an expressed interest by third parties to acquire some of these materials in the near future. It is anticipated that other potential users of these materials will be found. Reusing this material helps protect the environment since recycling avoids having to bury the material in the earth. Its potential use in down-blending with highly enriched uranium promotes nonproliferation goals.**

6. If more potentially reusable material is shipped to PORTS, please identify the impacts/restrictions on other buildings and facilities at the site (in the context of production reuse).

**Response: Should an alternative involving the PORTS site be selected, the UMG Program commits not to exceed the storage capacity of the existing UMG facility. As uranium in the inventory is dispositioned, additional uranium materials in the UMG inventory at other DOE sites could then be stored at PORTS on an interim basis. Thus, there should be no impacts or restrictions on the other buildings and facilities.**

7. Please identify the method of shipment, mode of transportation, and route(s).

**Response: Routing was calculated using the Transportation Routing Analysis Information System (TRAGIS) with two modes being considered—all shipment by truck and shipment by rail where appropriate with all other shipment by truck (termed the “truck/rail option”). See Appendix B for more details regarding routing assumptions and calculations.**

8. What guarantees will the local community receive regarding the ultimate disposition date?

**Response: DOE will attempt to disposition the uranium materials as quickly as reasonably possible and is committed to making periodic reassessments of materials in storage.**

9. Please provide the proposed schedule of re-classification to ensure the material is reusable, marketable, and not deemed a waste.

**Response: The UMG Program is proposing a review and documentation of material assessment not to exceed 5 years.**

10. What happens to the material if it is subsequently determined to be a waste?

**Response: If material is declared waste, additional funding will be requested from appropriate DOE Programs to dispose as waste.**

11. Please identify the markets for this material.

**Response: The potential markets are discussed in Section 2.3.8. They include commercial processing and domestic sales to commercial nuclear vendors for the manufacture of nuclear fuel for commercial nuclear power plants, maintenance of a strategic reserve, down-blending of HEU in conjunction with arms reductions treaties (with the resulting LEU available for use in commercial nuclear power plants), use by research facilities, other government agencies and foreign sales.**

12. When did the DOE preferred option first receive consideration?

**Response: During the internal DOE scoping process for this proposed action several alternatives were formulated including an alternative for Interim Consolidated storage at a Single DOE Site. Recent successful DOE experience at PORTS in storing the Fernald and Hanford uranium materials suggested that PORTS would be the preferred site under this alternative.**

13. How would the importation of the material affect current clean up project? Future D&D activities?

**Response: No impact to cleanup or D&D activities is anticipated.**

14. How many permanent jobs are associated with this project? Newly created full-time permanent positions with the DOE preferred option?

**Response:** The number of permanent workers (and initial construction workers) is shown for each site under each alternative in Chapter 4. See specifically Tables 4.3, 4.6, 4.9, 4.13, 4.16 and 4.19. For the Interim Storage at a Single DOE Site, the analysis performed in the PEA assumes an additional 168,000 ft<sup>2</sup> of space would need to be upgraded. As shown in Table 4.3, this results in 9 new permanent workers at PORTS (and 210 temporary construction workers). This assumes upgrades of buildings to increase effective storage space. However, as noted in response to comment #4, the UMG Program has decided to limit storage to the existing UMG storage facility. Therefore, permanent workers shown in the table would be significantly less.

15. Please identify the community benefits associated with the importation of this material to PORTS.

**Response:** This proposed action would continue to use the uranium-experienced and trained work force at PORTS. PORTS, with the uranium conversion plant and UMG activities, would be considered a multipurpose site versus a closure or D&D site.

16. Will the full proceeds, including applicable taxes, of the sale of this material be returned to the community?

**Response:** Proceeds will be used to cover costs incurred by the sale of the material, salaries, handling, and shipping at the PORTS site. Surplus would be returned to the U.S. Treasury as required by law.

17. Will the DOE utilize the designated CRO for disposal/sale of this material?

**Response:** Current plans are for the UMG to sale/disposition this material.

18. Define temporary storage.

**Response:** As stated in Section 2.3, DOE proposes to implement a long-term (greater than 20 years) management plan for its inventory of potentially re-usable LEU, NU and DU. Six interim storage alternatives are considered. Each of these alternatives also has associated with them the disposition of these uranium materials. Thus, the action will cover a greater than 20-year period. Further, this PEA does not provide for permanent storage at Portsmouth.

19. Assuming there is a market for this material, is there a prohibition or moratorium that would prevent or affect its sale?

**Response:** Under the disposition options discussed in Section 2.3.8, commercial process/domestic sales, transfer to research facilities and transfer to other government agencies can proceed in compliance with existing laws and regulations governing such sales or transfers. Before these materials can be sold, a Secretarial Determination is required to evaluate the potential for adverse impact on the market.

20. Does USEC have any need for any of this material?

**Response:** No. USEC uses UF<sub>6</sub> for their Paducah enrichment operations, which is not in the scope of the PEA.



21. Has the DOE considered transferring ownership of any of the material to USEC?

**Response: USEC cannot use this material in its current form. USEC uses UF<sub>6</sub>, which is not in the scope of this PEA.**

22. Will additional security be needed at PORTS if any of the material is imported?

**Response: DOE will review the security needs at PORTS should a decision be made to move these materials there. DOE is committed to ensuring appropriate security forces are maintained.**

23. Has DOE consulted with and sought the input of the Ohio Congressional Delegation regarding the importation of nuclear material to PORTS? If so, what was the outcome?

**Response: DOE has hosted several public meetings with attendance from members of the Ohio delegation. The delegation accepted the program and holds DOE accountable for maintaining interim storage in DOT-certified containers; not storing waste; and not receiving funding as part of the Portsmouth cleanup plan. DOE is obligated to honor the commitments for the UMG Program in the same manner as has been maintained for the Hanford, Fernald, and university materials received to date.**

24. Of the 158 sites currently storing the material, is there any more “reusable” or “potentially marketable” material being generated? If yes, will it automatically be transferred to the storage site chosen during this action?

**Response: The 14,200 MTU of uranium inventory is all this is addressed in this PEA. No other materials are being considered for consolidation.**

25. Has any of this material ever been classified as a waste?

**Response: No. All material is carefully screened prior to acceptance.**

26. Please identify all of the sites currently storing this material and provide a brief description of the material at those sites.

**Response: Table 2.1 provides the uranium management inventory (amount in MTU) at the various sites. Table A.3 gives some indication of types of uranium at some of the larger DOE sites. However, for security reasons the exact amount by type is not shown for all sites.**

27. Please explain the relationship (on page 3-2/Environmental Justice Section) between race, income and the decisions to store this material at any location.

**Response: DOE is required to determine if low-income or minority populations would be adversely and disproportionately affected by the proposed action. If this is the case then DOE must take this into consideration when making a final decision. There were no adverse environmental effects which would disproportionately affect low-income or minority populations for any of the alternatives considered.**

28. Please provide brief details on the nature of retrofitting/upgrade required at PORTS for the DOE preferred alternative.

**Response: The Uranium PEA analysis assumes 168,000 ft<sup>2</sup> of building upgrades. This would result in the receiving capability for loading/unloading needing to be improved. However, DOE is**

**committed to using only the UMG storage facility. Some additional modification to the current storage facility may be required as well as continued upgrades for the UMG facility.**

29. Who will be used to complete retrofitting required at PORTS?

**Response: Prior to the start of retrofitting existing facilities, a labor determination will be made to identify the work force that will be required to perform the work. This determination will take into consideration the type and extent of work to be performed.**

30. Who regulates the safe storage of the material at PORTS?

**Response: The program to ensure the safe storage of the uranium material at PORTS is administered by U.S.DOE.**

31. On behalf of the southern Ohio region, and before any decision on this matter is made, we respectfully request a meeting with the Secretary of Energy or his designee with authority to make decisions regarding this issue.

**Response: Comment noted.**

32. We believe this proposed action is contrary to our efforts, the stated DOE mission to reindustrialize, and the tireless efforts of our elected representatives in Columbus and Washington for productive, job intensive reuse of the PORTS facility in Piketon. Therefore, the SODI Board of Directors opposes the subject material being stored at the Piketon site. The residents of Southern Ohio desire projects that have recognizable value and benefit for the community. We want input into our future, the goals for the site, and new missions.

**Response: Comment noted.**

***Graham E. Mitchell***

***Chief***

***Office of Federal Facilities Oversight***

***State of Ohio Environmental Protection Agency***

33. During the meeting on June 4, it was noted that funding just became available to help with proper disposition of the uranium material currently stored at the Portsmouth facility and that additional funding would be needed to continue to find a new use for this material. Please state how US DOE intends to continue funding this program so that material will not be stored in perpetuity but rather shipped to other entities for re-use. US DOE must make funding this program a priority within each budget in order to continue disposition of the uranium material. Without proper funding, the necessary research to determine potential uses for this material cannot be accomplished. The cost for management and research for re-use of this material should not come from the budget for the clean up and remediation of the Portsmouth facility.

**Response: Funding for specific activities associated with disposition of material will continue to be requested as part of the annual budget process. Requests for this funding continue to be separate from funding requests for cleanup and remediation of the Portsmouth facility.**

34. Portions of the revenues generated from the Uranium Management Group should be maintained in Portsmouth to off set the cost of storing the material as well as cleanup activities.

**Response: Comment noted. See response to comment #16.**

35. Ohio EPA understands US DOE's goal to consolidate uranium materials to reduce costs and promote more efficient management of these materials. However, to really develop credibility, US DOE is going to have to prove that this material does have economic value and other companies or government agencies are interested in it. Uranium materials need to be leaving the site rather than just arriving for storage. US DOE should establish goals and commitments to stakeholders to remove a certain percentage of material per year. These commitments could be in the form of a letter of intent or other type of agreement with the State of Ohio.

**Response: Comment noted. The UMG is developing a disposition strategy to remove the material from the site as quickly and reasonably as possible. DOE will provide a letter of intent to the State of Ohio regarding this strategy. The disposition strategy will include DOE's commitment to make periodic, not to exceed five years, assessments and documentation of the material in storage in order to ensure that the material continues to have reuse potential.**

36. The draft EA noted that US DOE considers 20 years or greater to be interim storage. At what point within the 20 years will US DOE determine that this material is no longer of value and deem that it should no longer be stored but treated as a waste? What plan(s) does US DOE have to evaluate this material over the next 20 years to determine if it is of value? Because of past problems with storage of materials that later became waste, US DOE must make a commitment in the EA to establish a process where the inventory is reevaluated on a regular basis (3-5 years) to ensure that it still has economic value. Please refer to the comment above in regard to establishing an agreement with the State of Ohio to continually evaluate the material and remove a percentage of this material from the site each year. US DOE cannot continually accept material at the Portsmouth facility without establishing that the material is of economic value.

**Response: The UMG is developing a disposition strategy to move the material off the site as quickly and reasonably as possible. A process to re-evaluate the material in order to make sure it is not waste will be incorporated into the disposition strategy, as noted in response 35 above.**

37. US DOE mentions that disposition is a major function of this uranium management effort. US DOE must also include disposition as waste as an additional component of this effort. Over time, as US DOE reevaluates this material, some of it may no longer have economic value and US DOE should be able to disposition it as waste under this EA. US DOE must ensure that funding is available to remove the material that is no longer of economic value as a waste.

**Response: Comment noted. Text has been added to Sections 1.2, 2.3, and 4.10 to address potential waste streams. The UMG has received funding to evaluate disposition activities. If the material in storage is declared waste in the future, additional funding will be requested from the appropriate DOE program.**

38. The material currently at Portsmouth was moved there in order for US DOE to meet its regulatory requirements at several other sites. US DOE-Portsmouth has a regulatory requirement to address contamination at the site per the requirements of the Ohio Consent Decree. Currently, the material stored on site is in a building, which sits upon and is adjacent to a groundwater plume, which is to be addressed during the next fiscal year. The storage of the uranium material may interfere with the overall site clean up. Please state how US DOE will ensure that storage of the additional material will not interfere with the requirements of the Ohio Consent Decree to clean-up the site. US DOE

should conduct environmental characterization of buildings to be upgraded to meet the potential storage needs for incoming material. This effort could avoid future disruption of uranium management efforts.

**Response: As noted in responses to comments #2 and #6, the UMG Program is committing not to exceed the storage capacity of the existing UMG facility. Thus, no conflicts with the Ohio Consent Decree are anticipated. No activities that conflict with planned or ongoing remediation are anticipated.**

39. Please state how storage of this material will not interfere with the other potential missions at the US DOE-Portsmouth site? For example, if Portsmouth were to become a D&D site, would it still be a good location for this facility? How does the storage of this material fit in with the current mission of Portsmouth to clean-up the current contamination at the site and potential re-use of the site for future industrial purposes?

**Response: PORTS is an active DOE site with a uranium mission. It is not anticipated that interim warehousing of these uranium materials would adversely affect DOE's ability to conduct its other mission requirements at the site nor would this action interfere with ongoing cleanup efforts.**

40. US DOE should evaluate the long-term storage of the uranium material at a facility such as the Nevada Test Site. The material could be easily obtained if it is determined to be of economic value and should US DOE determine that it is a waste the material may not have to be moved again for final disposition. Storing the uranium material in this manner may save the US DOE valuable economic resources.

**Response: The Nevada Test Site (NTS) handles some forms of nuclear waste for the Department. The uranium materials evaluated in this PEA are not wastes and would not be appropriate to be stored at the NTS.**

41. Please state if the material will be tested for evaluation of RCRA characteristics including TCLP prior to shipping and storing the material to ensure that it meets regulatory requirements? Prior to shipping US DOE should make this evaluation to avoid potential regulatory issues at the site. As you are aware this site is not permitted to accept any hazardous waste from other facilities, to do so would be a violation of the permit.

**Response: Uranium materials are evaluated prior to acceptance by the UMG for shipment. UMG does not accept any materials that are determined to be waste. Therefore, the RCRA/TCLP testing would be unnecessary. In addition, these materials are "source materials" as defined by the Atomic Energy Act of 1954, and are exempt from the requirements by RCRA.**

42. If additional buildings/space will be needed for this effort, US DOE should coordinate with SODI in an effort to make the best future use of buildings.

**Response: Should an alternative be selected involving the PORTS site, the UMG Program commits to using the existing UMG storage facility.**

43. US DOE should evaluate who the likely users of the material may be prior to shipment to Portsmouth. US DOE should avoid shipment of material over long distances for storage only to have the material re-locate to a user near its origin (e.g. shipping the material from the Hanford Facility to Portsmouth then back to a western user). Conducting this type of evaluation up front will save US DOE economic resources as well as avoid potential risks associated with transportation of this material over long distances.

**Response: Comment noted.**

*Larry Scaggs*  
*Seal Township*  
*Pike County Ohio Trustees*

44. I am writing on behalf of the Seal Township, Pike County, Ohio, Trustees to oppose the DOE bringing in wastes from other sites to store at Piketon. The Piketon Gaseous Diffusion Plant is partially located in Seal Township. I am also a Board Member of the Southern Ohio Diversification Initiative.

**Response: The UMG has no intent to accept waste materials.**

45. DOE has called this waste a valuable material, but cannot explain how or why it is valuable. Furthermore, by bringing this waste to Piketon, 157 other sites will be cleaned up. We want to know why 157 other communities are more important than Piketon.

**Response: See response to comment #5. Since the uranium materials at all 158 sites listed in Table 2.1 are product and not a waste, the other 157 sites are not being “cleaned up.” DOE is attempting to consolidate the materials to increase efficiency and reduce costs.**

46. I do support projects that accelerate the cleanup of the Piketon site and provide a safe environment for our residents. The DOE should build and operate the DUF<sub>6</sub> plant and accelerate cleanup of the lands and buildings, such as the 340 acres SODI tried to get for economic development. These project benefit the community by creating jobs and cleaning up our environment. Storing waste here for 20 years does not.

**Response: Comment noted.**

*Teddy L. West*  
*Scioto Township Trustee*

47. I am a Scioto Township Trustee elected by the residents surrounding the Piketon gaseous diffusion plant, a member of the Southern Ohio Diversification Initiative Board of Directors, and owner of property adjoining the Piketon gaseous diffusion plant. I am opposed to the storage of uranium waste that is described as “reusable material” in the draft programmatic environmental assessment DOE/EA-1393. As a neighbor of the plant and representative of the people surrounding the plant, I do not want our community to become DOE’s dumping ground. How can you tell our community that the waste is valuable material, yet you can tell the other communities that the material is a waste and they are now cleaned up? As a SODI Board member and Scioto Township Trustee, I support projects that will benefit our community by providing jobs and a safe environment for our people. We want DOE to accelerate cleanup, building the DUF<sub>6</sub> plant, transfer land to SODI, and bring new enrichment technology to Piketon.

**Response: Comment noted. The uranium materials evaluated in this EA are potentially re-usable and, thus, valuable materials. They are not wastes.**

**Gilbert D. Drexel**  
**Manager of Projects**  
**Portsmouth Site Office**

48. Sec. 1.1 (“Purpose and Need for Agency Action”, pg. 1-1). We suggest that the paragraph be revised by adding a new sentence (shown in *italics*), so that the paragraph reads as follows:

“The U.S. Department of Energy (DOE) proposes to implement a comprehensive management program to safely, efficiently, and effectively manage its potentially reusable low enriched uranium (LEU), normal uranium (NU) and depleted uranium (DU). *Uranium materials which are presently located at multiple sites are to be consolidated by transporting the materials to one or several storage locations, to facilitate ultimate disposition.* Management would include the storage, transport, and ultimate disposition of these materials.”

**Response: Text added as recommended.**

49. Sec. 2.2 (“No Action Alternative”, pg. 2-9). In the last sentence in the paragraph, suggest changing “disposed” to “dispositioned”.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

50. Sec. 2.3 (“Proposed Action”, pg. 2-9). In the first paragraph, we suggest that the 1<sup>st</sup> sentence be revised to create two sentences, to read, “DOE proposes to implement a long-term (greater than 20 years) management plan for its inventory of potentially reusable LEU, NU, and DU. Uranium materials which are presently located at multiple sites are to be consolidated by transporting the materials to one or several storage locations, to facilitate ultimate disposition.”

**Response: Text changed as suggested.**

51. Sec. 2.3 (“Proposed Action”, pg. 2-9). In the third paragraph, suggest revising the first sentence to read, “DOE must determine the safest, most effective, and most efficient approach for the consolidation and storage of this material.”

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

52. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. The 1<sup>st</sup> paragraph currently reads as follows:

“Normal operations result in no more than negligible acute or chronic consequences and risk at any site under any storage alternative or disposition option. Environmental impacts associated with normal operations vary substantially from alternative to alternative and, occasionally, by site within a given alternative. General handling accidents result in no more than negligible acute or chronic consequences and risk at any site under any storage alternative or disposition option. Chronic human health and ecological consequences and risk are negligible to low for all sites under all alternatives. The highest transportation consequences are for alternatives that involve moving uranium materials to a western location, either to a commercial site or to INEEL.”

We suggest that this summary paragraph be reworded to more broadly discuss the PEA’s conclusions. The conclusion/summary as we see the overall PEA analysis is that there were none-to-minor impacts for all of the alternatives from the standpoint of environmental impact; negligible-

to-low impacts from the standpoint of facility accidents (fire and seismic) for all the alternatives; while transportation effects for the alternatives generally reflected the extent of material transport associated with the alternative being analyzed. The overall conclusion is that potential impacts appear not be significant for any of the material consolidation alternatives which were analyzed.

**Response: Text in the Summary and Conclusions in the PEA has been modified. Should DOE determine that a Finding of No Significant Impact (FONSI) is warranted, the FONSI will be where “significance” of impacts will be discussed.**

53. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. We also suggest that discussion be added to the paragraph to summarize the reasons for proposing the PORTS option, given that at least one other option (i.e., the partial consolidated storage at several DOE sites) is forecast to have a less expensive construction cost. The reasons for proposing the PORTS option, are that a single consolidated storage location affords greater flexibility and ease of future disposition of the material, and reduces the overall expected future cost for facility surveillance & maintenance (S&M) and material accountability/material S&M, than if the material was at several locations. These benefits outweigh the potentially greater up-front renovation/construction costs.

**Response: Comment noted. The focus of the PEA is to address the potential environmental impacts associated with each of the alternatives considered. The PORTS site due to the existence of sufficient storage space to accommodate the entire uranium inventory under consideration has the least environmental impacts of a single consolidated storage site. DOE can consider factors in addition to environmental impacts when making an agency decision. In addition to those noted in the comment, PORTS has a work force trained in handling uranium materials and a very recent, successful experience in storing uranium materials from the Fernald and Hanford sites.**

54. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. Consideration should be given to adding an overall summary table (example attached).

**Response: Comment noted.**

55. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. The statement that “environmental impacts ...vary substantially from alternative to alternative” appears inconsistent with the analysis, which indicated that for all the alternatives, the environmental impacts were negligible, minimal, or at most minor. “Vary substantially” seems to imply that there are significant impacts, when the analysis says there were none or minimal.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

56. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. The statement that “General handling accidents result in no more than negligible acute or chronic consequences...” appears correct, based on the analysis. However, “general handling” is part of “normal operations” – which from the 1<sup>st</sup> sentence have no impacts. It is unclear as to why the extra emphasis is being given to the impacts from “Normal operations”.

**Response: The PEA addresses both accident conditions and normal operations (meaning those situations and activities in which accidents are not occurring). Normal operations, including general handling accidents, have no more than negligible acute or chronic consequences.**

57. Sec. 4.11, “Summary and Conclusions”, pg. 4-19. The paragraph omits discussion of the negligible-to-low risk associated with facility accidents (fire and seismic).

**Response: Text added to Section 4.11.1.**

58. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. The 3<sup>rd</sup> paragraph currently reads as follows:

“In addition to surface contamination, radiation dose from the stored uranium materials can be expected. Dose rates from any single stored container are no more than 3 to 4 mrem/h. The dose rate at a distance of 0.3 m (ft.) from a container is about 1 mrem/h, and the dose rate at a distance of 6 m (20 ft.) is < 0.5 mrem/hr (approximately the same as normal background radiation doses). These dose rates are not affected by stacking the containers, because the containers and the materials themselves provide substantial shielding. These dose rates are considered negligible to any receptor (facility worker, co-located worker, or public).”

Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. Suggest specifying whether the “3 to 4 mrem/h” dose rate is “on contact”. Also, we suggest to citing the basis for indicating the dose is 3 – 4 mrem/h maximum.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

59. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. Based on calculations, a dose at 6 m (20 ft.) would be < 0.05 mrem/hr. Suggest using “<0.05 mrem/hr” – rather than “<0.5 mrem/hr.”

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

60. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. It is unclear as to what the information in the parenthesis – “(approximately the same as normal background radiation doses)” refers to. If what is being referred to is 0.5 mrem/hr, this would not seem to be “approximately background”, as 0.5 mrem/hr at 2000 hrs/year would result in 1 rem/yr., which exceeds background. On the other hand, if what is being referred to is 0.05 mrem/yr, then this does more closely approximate background.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**

61. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. The phrase “dose rates not affected by stacking the containers” is somewhat unclear. “Stacking” typically refers to one container on top of another. We would think that dose rate would be affected if there were multiple containers stacked on top of each other, or containers side by side. The next statement regarding containers providing shielding seems to be referring to the containers behind one another – not container “stacking”. Suggest clarifying whether we’re referring to “stacking” containers on top of one another, or those behind each other. Overall, while there may be mitigation of dose from shielding, it would also seem that there could be dose contribution from adjacent or stacked containers.

**Response: This comment presumably refers to the text in the Preliminary Draft PEA (internal DOE review copy). This change has already been made in the Draft PEA.**



**The assumption is that the shielding (side-by-side locating of containers) cancels out the two-deep stacking of containers. However, for the purposes of calculating doses to the public, the more conservative assumption of no shielding is used.**

62. Sec. 4.2, “Consequences Common to All Alternatives”, pg. 4-3. The conclusion that “these dose rates are considered negligible to any receptor” may be correct, but it is not clear from this paragraph how this is so, given the above comments.

**Response: Corrections and clarifications made in the Draft PEA hopefully make this clear.**

63. Sec. 4, “Consequences” – General. Consideration should be given in Sec. 4 (“Consequences”) to adding specific Appendix references so that the reader can easily trace the amounts given in Sec. 4 back to where the amounts were calculated and appear in the appendices. As an example, for the “transportation effects” amount shown in table 4.17, add a reference or footnote to indicate where these amounts are shown in Appendix B (“Transportation Analysis”).

**Response: Chapter 4 addresses the environmental consequences of the various alternatives. Detailed information supporting the chapter 4 discussion is contained in various appendices, to which the reader is directed for more detailed information.**

64. In Sec. 4 (“Environmental Consequences”), in the “Impacts” tables – tables 4.3, 4.6, 4.9, 4.13, 4.16, and 4.19 – the cost of upgrades appears in each table. This is referred to in each table as “construction/upgrades cost”. From the methodology (Sec. 4.1, “Methods”, 2<sup>nd</sup> paragraph, pg. 4-1), it appears that the intent of these cost figures is that they include not only the cost of construction/upgrades but also the cost of surveillance & maintenance (S&M). However, it is not clear that S&M costs – either facility S&M or material S&M (which would also include maintaining nuclear material control & accountability) – are fully included by this approach.

**Response: The cost numbers in the tables cited are for construction costs only. They represent a one-time impact occurring over a short period of time (assumed to be one year). As such these costs help demonstrate the socioeconomic differences among the various alternatives. They are used to estimate job creation and to quantify the effects of the action on the economic region of concern. S&M costs are not included; however, the number of permanent workers is estimated.**

65. Sec. 4, “Consequences” – General. It may be more appropriate to base facility and material S&M costs on the total square footage of storage space for the material – not just on the upgraded space. The conclusion that would likely emerge is that there would be a significant cost component associated with S&M, at each facility where material would be stored. Eliminating this duplicative S&M cost at multiple storage facilities would appear to be a strong supporting rationale for the proposed approach – consolidating material at a single DOE site. Consideration should be given to discussing these S&M costs and/or including S&M costs in the affect “impact” tables.

**Response: See response to previous comment.**

*Harry Rider*  
*Vice Chairman*  
*Pike County Board of Commissioners*  
*Waverly, Ohio*

66. This proposed action raises numerous concerns. Specifically, safe transportation concerns, and security of all material at the Piketon Plant is in question. Health of workers, residents and environmental safety issues are also of major concern.

**Response: Comment noted. Transportation, facility accidents, and normal operations have been evaluated for all alternatives with risks to workers and the public identified.**

67. The perception of Pike County, our home, being a national dump site for the governments excess waste is appalling, to say the least.

**Response: Comment noted. The uranium materials evaluated in this PEA are not wastes but potentially reusable materials.**

68. This project has *no* financial, environmental, education or social benefits to Pike County and its people. For these reasons, I am very much opposed to bringing any material to Piketon for storage.

**Response: Comment noted. To date approximately \$5.7 million dollars have been spent at Portsmouth for previous uranium management activities. It also provided five direct jobs and numerous indirect jobs for the area.**

*Tom Reiser*  
*Vern Riffe, III*  
*Opal M. Spears*  
*Scioto County Commissioners*

69. Whereas, the Scioto County Board of Commissioners believe the storage of this excess uranium and the marketing of these materials over a 20+ year time frame will have a negative effect on our current and future marketing of the PGDP and GCEP sites for re-use and on the marketing of industrial sites for new business development in south central Ohio.

**Response: Comment noted.**

70. Whereas, the Scioto County Board of Commissioners also have a matter of concern over the downgrading of security forces at the PGDP in recent years.

**Response: Comment noted.**

*Lee A. Barclay, Ph.D.*  
*Field Supervisor*  
*U.S. Fish and Wildlife Service*  
*U.S. Department of the Interior*

71. The draft PEA does not include copies of correspondence requesting informal Section 7 consultation with U.S. Fish and Wildlife Service (Service) Ecological Services Field Offices in Ohio, South

Carolina, or Idaho. Service personnel have reviewed the information submitted and offer the following comments relative to the PGDP in McCracken County, Kentucky and the Oak Ridge Reservation (ORR) in Roane and Anderson Counties, Tennessee, for consideration.

**Response: DOE sent letters requesting informal consultation to subject USFWS offices on May 20, 2002. Copies of these letters and letters of response have been added to Chapter 7.**

72. The description of Federally endangered and threatened species present in the vicinity of PGDP (Section 3.2.5) generally reflects information provided by this office to DOE on February 23, 2001. The evening bat (*Nycticeius humeralis*) does not currently have Federal protection pursuant to the Endangered Species Act.

**Response: Text in 3.2.5 was modified.**

73. According to our records, the following federally listed endangered species are known from or have the potential to occur within the project impact areas on the ORR:

gray bat	<i>Myotis grisescens</i>
Indiana bat	<i>Myotis sodalis</i>
pink mucket	<i>Lampsilis abrupta</i>

We recommend that qualified biologists assess potential impacts and determine if the proposed ORR alternative may affect the species. We recommend that you submit a copy of your assessment and finding to this office for review and concurrence. A finding of “may affect” could require the initiation of formal consultation procedures.

**Response: Text in Sections 3.3.5 and 3.4.5 has been modified to reflect information provided. Since the potential acreage to be impacted would be in the middle of already industrial sites, it is reasonable to assume the potential for impacts to the species noted above is virtually non-existent. A Biological Assessment was prepared and sent to your office under separate cover; it is also included as part of the agency correspondence in Chapter 7 of this PEA.**

74. Since the Portsmouth Gaseous Diffusion Plant has been tentatively selected as the preferred alternative storage location, we recommend that the ecological resources section of this draft PEA referenced above be modified to accurately reflect the current extent of knowledge regarding biological/ecological resources of the Y-12 and ETTP areas, including East Fork Poplar Creek, Poplar Creek, and the Clinch River.

**Response: See response to comment #73.**

75. Since the American robin (*Turdus migratorius*) was modeled in the risk assessment in Appendix C of this draft PEA and given the responsibilities placed on Federal agencies by Executive Order 13186, we believe it would also be prudent to include discussions regarding migratory birds.

**Response: The interior forest habitat required by many species of migratory birds has been evaluated for the Oak Ridge Reservation with particular emphasis on the lands surrounding the ETTP site (SAIC 2002, *Draft Land Use Technical Report*, June). The proposed action would not affect interior forest habitat and the bird species that utilize them at any of the DOE sites. Some migratory birds, such as the American Robin, use more open, often man-altered habitats. It is possible that new construction in the middle of these industrialized sites could affect the foraging and nesting areas for some migratory bird species.**

**James A. Brushart**  
**Chairman**  
**Pike County Board of Commissioners**  
**Waverly, Ohio**

76. In Pike County, we are trying to pick up the pieces and make economic development attractive. If we are made a dumping ground for the governments waste to be stored, this will severely hamper any possibilities of economic development in the future. Pike County would be recognized as a national dumping site for waste, thus creating a more negative image of Southern Ohio.

**Response: Comment noted. The uranium materials covered by the proposed action are potentially re-usable and would be stored temporarily until they could be dispositioned. These materials are not wastes.**

77. In closing, I ask you on behalf of thousands of Pike County Constituents, to please take your waste elsewhere. I challenge the Department of Energy to do something good for Pike County and its people. We certainly deserve much better treatment than what we have received in the past.

**Response: Comment noted.**

**H. E. King**  
**8339 SR 139**  
**Minford, Ohio 45253**

78. Please please don't let Washington and Cincinnati dump excess uranium at the Portsmouth Diffusion Plant in Pike County. Southern Ohio has a rate of more cancer here than any place of the U.S. We have fought for years to have it cleaned up. EPA says its safe one month and unsafe the next month. It is densely populated in this area. There are many other places to take it like Idaho Falls and Hanford, Washington and others more safe. We do not want it here and pray you don't dump it on us.

**Response: Comment noted.**

**Cindy Newsom**  
**2315 Grandview Avenue**  
**Portsmouth, Ohio 45662**

79. I am writing in response to the June 7, 2002, article in the Portsmouth Daily Times. I would like to strongly suggest that you find somewhere else to store your material (other than at the Portsmouth Gaseous Diffusion Plant). I support Rep. Ted Strickland when he said, "You can't trust them (DOE) on anything they've said to us. They've lied to us before." I do not think that using PGD Plant is in the best interest of our area – we have enough problems without needing dumped on with nuclear waste. I don't believe the DOE will "re-use" or re-sale the material. A dump site is a dump site.

**Response: Comment noted.**

***D. E. Culver***  
***878 Shawnee Road***  
***W. Portsmouth, Ohio 45665***

80. No! No! No! No more excess uranium or any uranium at Portsmouth Gaseous Diffusion Plant. We've had this killer here since the 50's. No More. The fish in Scioto River are covered with sores, the bottom feeders are already dead. The wells are contaminated. The trees are dying. People are dying – go to hospital in Columbus nurses ask "Where are you from?" Your reply "Portsmouth". Their response "Oh the Cancer Capital of the state."

**Response: Comment noted. The risks to the workers and general population from transportation and interim storage of these materials at each site, including PORTS, were determined in the PEA. The risks were negligible to low.**

81. You clean this killer up at Fernald and Hanford and ship it someplace else to contaminate another place. How stupid can you get? For years you've talked "Jobs" well you know what you can do with your "Jobs".

**Response: Comment noted.**

***Norman A. Mulvenon***  
***Chair***  
***LOC Citizen's Advisory Panel***

82. The CAP reviewers find the document poorly written and the alternatives presented in an unclear and confusing manner, such that the average reader cannot make an intelligent evaluation. It appears that no quality assurance was performed on this document prior to release for public comment. At the very minimum, the subcontractor, Science Applications International Corporation, should have read their own material for content and used the appropriate annotated outline to guarantee that all text material was included and properly organized to allow proper evaluation. At the maximum, all involved parties as listed on page 6-1 should have properly reviewed and vetted this document. The CAP's primary recommendation is that DOE retract the document and have it internally reviewed, rewritten, corrected, amended, and then re-issued for public comment.

**Response: Comment noted.**

83. The PEA lacks an Executive Summary.

**Response: A Summary and Conclusions section (4.11) summarizes many aspects of the PEA results. An Executive Summary is not required for a PEA.**

84. The preferred alternative – Portsmouth – is not stated until pages 2-10. Even then, it is unclear whether this is the preferred alternative of all alternatives or only of the DOE sites under consideration. The PEA should present the compelling rationale for the preference. The reasons listed are not "unique" as most are applicable to the Y-12 National Security Complex also.

**Response: Section 2.3.1 is the appropriate section in which to address PORTS as the preferred interim storage location. DOE's preferred alternative is to locate these materials at PORTS; thus, it is preferred among all the alternatives not just among the DOE sites. The combination of the characteristics listed in Section 2.3.1 makes PORTS preferred. The word "unique" has been deleted from the text in Section 2.3.1.**

85. The various alternatives are not numbered or consistently named in such a way as to easily identify them for comparison. The various alternatives also appear in random order throughout the document causing additional confusion for the reader. An example of this is the final interim storage alternative listed in Table 2.2 “interim partially consolidated storage based on physical form” which is apparently the same as “Interim Partially Consolidated Storage at Several DOE Sites” in Section 4.11.1, Comparison of Alternatives.

**Response: The order in which the alternatives are evaluated in Chapter 4 parallels the order in which they are introduced in Chapter 2. The reference to “One DOE site” in the alternative title has been changed to “a Single DOE site” to be consistent. The discussion in Section 4.11, “Summary and Conclusions,” addresses the alternative with the greatest potential for environmental impacts (Interim Storage at a Single Commercial Site) first and the alternative with the least environmental impact (No Action) last.**

86. There are errors or unexplained inconsistencies between the final interim storage alternative listed in Table 2.2 “interim partially consolidated storage based on physical form: and the unnumbered, unnamed table in Section 4.9 that shows the storage plan for materials based on physical form.

**Response: Table 2.2 has been corrected. The referenced material in Section 4.9 is intended as text not a table.**

87. NU in the acronym list is defined as normal uranium. The definition used in Appendix A, page A-iv is natural uranium. The terms “natural uranium” and “normal uranium” are interchangeably and randomly used throughout the EA text and appendices. This is confusing to the reader and technically inaccurate, as “natural uranium” is the proper term.

**Response: The definitions will be changed to reflect the following: Natural uranium, as found in nature, is unaltered isotopically with an isotopic content of 0.711%  $^{235}\text{U}$ . Normal uranium contains the same percent of  $^{235}\text{U}$  as occurs in nature, but the 0.711%  $^{235}\text{U}$  signature may have been attained by blending uranium of different isotopic compositions or by processing in a gaseous diffusion cascade.**

88. The missions of the various sites for storage were not properly considered.

- Portsmouth is no longer used as a gaseous diffusion facility and its future role may be limited to being one of the two sites for a conversion plant for depleted uranium hexafluoride (Paducah being the other site).
- The three sites at Oak Ridge are lumped together in Table 2.1 and Oak Ridge is the only designator listed in later tables. In reality, the three major DOE sites in Oak Ridge have separate missions and two of the sites are not suitable for the proposed storage mission. ETPP is a closure site, and DOE has stated an intention to transfer the site to other ownership by 2008. ETPP should not even be on the list of alternatives, in that there is no future DOE mission contemplated once the site is cleaned up and closed. ORNL is listed in Table 2.1, but then is not included in any of the analyses. As a national laboratory, it is a poor candidate for a storage site.

**Response: Section 2.1, “Background,” discusses the historical missions of the various DOE sites. It was noted (p. 2-2) that ETPP is undergoing reindustrialization, D&D, and environmental restoration. ETPP is a DOE site; DOE has not transferred the land. Thus, DOE believes that, under the NEPA, the ETPP would be a reasonable site. The intent of Table 2.1 is to show where the UMG uranium inventory is located; 1,445 MTU are located at the three DOE sites in Oak Ridge. Later in**

**the EA, DOE explains that both ETTP and Y-12 (but not ORNL) are considered as potential interim storage sites.**

89. Information is scattered and difficult to find in the PEA. For example, on page 2-3 it is stated that the uranium trioxide at SRS is not considered within the scope of this PEA. We don't learn why (that these oxides are not part of the UMG inventory) until page 4-21.

**Response: Text on page 2-3 clarified.**

90. The option of transportation by barge is not evaluated.

**Response: Comment noted. This option was not evaluated because it is unlikely that the material would be transferred by this mode of transportation.**

91. The PEA doesn't seem to focus on the most logical analysis of alternatives for interim storage. This would be the consolidation of uranium at sites with compatible enrichment forms or with potential future uses. Some examples:

1. Portsmouth and Paducah will both have facilities for conversion of depleted uranium hexafluoride to oxide or metallic forms. Either of these locations would be a logical choice for the national stockpile of DU.
2. Paducah has a continuing mission of gaseous diffusion enrichment of uranium for commercial nuclear fuel. It would be a logical location for the storage of LEU.
3. Y-12 has exceptional capabilities for handling and storing HEU, and could act as a repository for any of the forms, particularly those that are more reactive such as metallic uranium. Because proposals for future disposition of HEU include down-blending to a lower enrichment, Y-12 might be a logical place to store compatible forms that could be used for this purpose at a later date.

**Response: Comment noted. Each of these facilities was evaluated in the PEA.**

92. The transportation analysis relies too heavily on computer modeling without actual analysis of the existing roads. Portsmouth is not accessible by interstate and for this reason would be a poor choice for storage of all forms/enrichments, making it a hub for a major shipping campaign involving sensitive cargos. It is more logical to minimize transportation on secondary roads and express a preference for sites close to interstate highways or other major bulk transportation options (rail or barge). In particular, if multiple shipments of a particular form or enrichment to a variety of end users are likely, the preferred storage location should weigh access to good transportation routes more heavily.

**Response: Comment noted. The transportation analysis focused on the potential environmental impacts associated with shipment of the uranium materials.**

93. With so much uncertainty about end states, one wonders why DOE has undertaken an assessment at this time. It also makes little sense that DOE's huge stock of depleted uranium hexafluoride in cylinders – soon to be converted to a more stable chemical form – is outside the scope of the PEA.

**Response: Comment noted. An EIS is being prepared for this DUF<sub>6</sub>. The UMG inventory of uranium does not include UF<sub>6</sub>. Other forms of uranium that are included in the PEA have been addressed.**

***LOC/CAP Member***

94. I also find the document exasperating, in that information is either not there or hard to find. I haven't found the form the uranium is at the various sites. With so much uncertainty about end states, one wonders why DOE is bothering with an assessment at this time. Particularly when the gorilla of depleted uranium hexafluoride in cylinders appears to be outside the scope.

**Response: Information on the form of uranium at various sites is in Table 2.2, page 2-5, under the "Interim partially consolidated storage based on physical form" alternative.**

**The uncertainties associated with final disposition do not preclude the need for DOE to find a more efficient management plan for its UMG inventory in the interim.**

***Larry R. Hurley***

***(email)—no address or affiliation provided***

95. Feedback: I'd like to see this material stored at the Yucca Mountain site (along with all the rest of the nation's nuclear materials).

**Response: Comment noted.**

***Lee Poe***

***(email)-- no address or affiliation provided***

96. I am reading the PEA on uranium and I find that it doesn't include most of the uranium at SRS. Please provide me with the rationale on why the uranium selected was selected and why other uranium at DOE sites was not included? On the surface it sounds like the PEA should consider all of DOE's U. (Please note that this comment has been modified because of security concerns.)

**Response: The material selected for consideration is viewed to be high quality, stable material with a substantial volume for potential reuse.**

97. Why was UF<sub>6</sub> not covered in the EA?

**Response: It is outside the scope of the Department's analysis for this PEA. UF<sub>6</sub> is being addressed in an EIS.**

98. Was scoping performed on this NEPA document? If so, please send me the scoping document summary.

**Response: Scoping is not required for a PEA.**

***Kathleen E. Trever***

***Coordinator-Manager***

***INEEL Oversight***

99. In stating a need for this EA, DOE emphasizes increasing budget pressures, good stewardship of resources, and ensuring maximum cost-effectiveness. DOE does not, however, provide a clear



explanation of how its alternatives for moving materials around before deciding on their disposition addresses these goals. This explanation is essential to supporting a sound policy decision.

**Response: The consolidation of the potentially reusable DOE uranium material provides an opportunity to retain a valuable asset while supporting the critical mission of DOE nuclear facility closures. For example, in the case of the Fernald site, a sizable quantity of potentially reusable uranium had to be dispositioned in order to support the site clean-up schedule. Fernald's review of the options for disposition of this material concluded that ~ \$23M was saved in the shipment of the material to PORTS versus the site removal and burial option. In addition, Fernald estimated that if the PORTS option had not been available, the costs due to schedule delays may have exceeded \$75M. Each of the UMG activities to date, and future UMG activities to relocate potentially reusable uranium, have/will utilize a deliberate decision-making process.**

100. Although DOE may be able to "bound" impacts based on hypothetical disposition paths, the geographical locations for disposition of the various physical forms could form a discriminator among alternatives that require transport, facility upgrade or construction. If, for example, there may be future activities using materials at their current or nearby location, it probably does not make sense to "consolidate" them elsewhere.

**Response: DOE makes decisions based on the best information available at the time of an action. If changes occur in the future, previous decisions will be re-evaluated to determine if adjustments need to be made. The PEA is an input to these future decisions.**

101. To support a sound decision, DOE should also provide information as to whether other activities at the storage facilities in question would still require similar monitoring or upkeep regardless of whether the reusable uranium materials remain. To enable fair evaluation of the alternative for consolidation by physical form versus solely geographical approaches, DOE should also provide information as to how physical form can relate to ultimate disposition, as well as identifying any differences in interim storage needs.

**Response: DOE estimated the manpower required to monitor the storage sites. Under the No Action alternative, the current level of monitoring would presumably continue at the various sites. At PORTS the existing buildings proposed for storage, under several alternatives, would have some level of monitoring if none of these alternatives is selected and the buildings continue in their present state. The level of monitoring for present uses was not estimated but is assumed to be similar to the proposed action.**

**Regarding consolidation by physical form, DOE has received inquiries and expressions of interest in some of the uranium materials in the UMG inventory; however, there is not sufficient certainty in the final disposition paths to allow a detailed analysis.**

102. The document's simplified assumptions prevent much quantitative analysis, but do allow some qualitative comparisons.

**Response: Transportation risks, various accident scenarios, and socioeconomic impacts (including construction costs, permanent and temporary jobs, and acres potentially affected by new construction) have been quantified using a variety of assumptions documented in the PEA.**

103. The fundamental, outstanding question left by the EA, however, is to what extent the alternatives can achieve DOE's stated purpose of achieving management efficiencies.

**Response:** The PEA addresses a portion of that question, namely what would be the expected environmental impacts of implementing the various alternatives. Estimates of construction costs are part of this analysis. DOE will also consider other costs, such as surveillance and maintenance, transportation, and facility upgrades, as well as other factors in reaching a decision on interim storage.

*Richard Demming*

104. All references to aircraft impact as shown on page 4-1, last paragraph, last sentence. This suggestion is made after the 9/11 attack. Replace references with external events.

**Response:** Reference to aircraft impact has been removed.

*Steven T. Carter*

*Executive Director*

*Scioto County Economic Development Office*

105. The Scioto County Economic Development Office and the Scioto County Commissioners, along with U.S. Congressman Ted Strickland, are opposed to the siting of the 14,200 metric tons of re-usable excess uranium from other DOE sites that are proposed to be stored at DOE's Portsmouth Gaseous Diffusion Plant. Even though we are a rural/small city community, our region is densely populated. We believe there are other DOE sites that are much larger than our 3,700 acre site where these materials can be stored and marketed over time. We also believe the storage of these materials over a 20+ year time frame will have a negative effect on our current marketing efforts of the site for re-use and on the marketing of industrial sites for new business development in South Central Ohio.

**Response:** Comment noted. More important than the size of the plant are the amount and availability of storage space and a trained/qualified workforce. PORTS has sufficient existing storage space to accommodate the entire 14,200 MTU inventory. PORTS is already storing approximately 4,500 MTU. However, as noted in the response to comment #4, the UMG Program commits to limiting use to the existing UMG storage facility.

106. Another major concern has been the downgrading of security forces in both manpower and armaments of PGD's security forces over the last several years.

**Response:** Comment noted.

*W. Lee Poe, Jr. (Additional Comments—received after close of comment period)*

107. P2-1, 1<sup>st</sup> Paragraph. Broaden this paragraph to cover UO<sub>3</sub> and state why UF<sub>6</sub> is not included. This sets the stage for the NEPA document.

**Response:** The information in this paragraph is general background and is not intended as a detailed list of what is included in the PEA. UF<sub>6</sub> is not part of the UMG inventory because the UMG is seeking uranium materials with minimal nuclear safety requirements. A PEIS was prepared for DUF<sub>6</sub>, and a separate EIS is being prepared to further address DUF<sub>6</sub>. UO<sub>3</sub> is included in the PEA.

108. Table 2.1 on P 2-2 should be expanded to include other uranium materials stored for reuse or disposition.

**Response: Text acknowledges that other uranium materials are at several DOE sites, which are not part of the UMG inventory and are not part of the proposed action. They are addressed as appropriate under the cumulative impacts analysis but are not included as part of the tables referenced.**

109. P 2-3 states most of the uranium is in the form of uranium metal. Where is this covered in the EA? How much of the 14,200 MTU is metal. EA should provide a table that provides the breakdown of the inventory into its associated form.

**Response: Table 2.1 provides the uranium management inventory (amount in MTU) at the various sites. Table A.3 gives some indication of types of uranium at the larger DOE sites. However, for security reasons, the exact amount by type is not shown for all sites.**

110. In the fourth paragraph on P 2-3 the SRS inventory is described as contained in wooden boxes, cardboard boxes for metal and drums for LEU Oxide. I was never able to determine if the EA contained environmental consequences from repackaging of that inventory. Later the EA discusses storage of drums and steel boxes.

**Response: The impacts associated with repackaging are covered in Section 4.2 of the PEA.**

111. Figure 2.1 shows example storage of metal boxes and drum storage. This figure is unclear in the printed version of the EA. It is basically a black photo with a large white box in the center. When I looked at the electronic version, it was legible. Should be legible in all forms of the EA. The title of the figure should specify the multi-stack storage being discussed when the figure was called out.

**Response: Commented noted. The intent of the figure is to show the relative sizes of drums and boxes, which contain uranium materials.**

112. The No Action alternative described in Section 2.2 on P 2-9 should provide clarify the small site storage. How many sites are assumed to store this uranium and for how long? The last sentence says the uranium would not be dispositioned. In my mind this means very long term consequences and none were discussed in the EA.

**Response: The first sentence in Section 2.2 states that ongoing storage would continue at all existing facilities. The impacts of the No Action Alternative are discussed in Section 4.3.**

113. As already pointed out the scope of the EA needs be expanded to discuss the other uranium being stored and discusses in fifth paragraph on P 2-9.

**Response: Comment noted.**

114. The last paragraph on P 2-9 says the analysis associated with the action alternatives discusses the bounding assumption associated with disposition. There is very little additional information in the EA on the bounding assumptions.

**Response: The bounding assumptions are discussed in Section 4.10. Additional text has been added on waste streams.**

115. P 2-10 in Section 2.3.2 says that DOE has not selected a commercial site for uranium consolidation in this alternative but for analysis purposes, a western and an eastern site were selected for the transportation analysis. Does the selection of Utah and South Carolina maximize transportation consequences? The justification for this selection should be given a few more sentences of description to convince the reader that this assumption is reasonable.

**Response: The selection of these two sites for transportation analysis does not result in the absolute maximum distance. The sites are realistic possibilities and serve as a “reasonable worst case.” More text was added to Section 2.3.2.**

116. The alternative for interim partially consolidated storage by physical form described on P 2-11 in paragraph 2.3.6 calls for SRS to be the metal storage site. I could find no information to support metal storage at SRS. In my technical judgment, metal storage has much larger consequence than does storage of oxides. As I indicated in my earlier letter, metal has a unique hazard, not analyzed in this EA, of metal fire potential which is exaggerated in long-term storage.

**Response: Comment noted. We found that oxides have a potential greater than metal for environmental impact in the case of an accidental release (from a fire, etc.). Powdered oxides are readily transported to the atmosphere and, subsequently, to a number of potential receptors in a fire scenario.**

117. Paragraph 2.4 discusses DOE's belief that uranium storage is a government asset. Two sentences later it says DOE might declare other inventory a waste. This seems to be a two-forked statement. This paragraph should be rewritten to eliminate this apparently inconsistency. I would really like to know what it is saying. What makes some uranium a national asset and other uranium a waste product?

**Response: Section 2.4 states that the uranium materials in the UMG inventory and, thus, part of this PEA are potentially re-usable. Therefore, the alternative of addressing them as waste is not considered further. This statement recognizes the fact that DOE has other uranium materials, which have been legally declared as wastes.**

118. Section 3 discusses the affected environment at Portsmouth, Paducah, Y-12, K-25 (both in Oak Ridge), and Savannah River Site. There is no mention of the other sites that currently store some of the uranium or those planned as alternatives for possible storing and managing uranium within this EA. These sites should be discussed in this section, but probably not in the detail of the five major sites.

**Response: The affected environment of sites DOE is considering for interim storage is discussed in Chapter 3.**

119. The Method's section (P 4-1 in Section 4.1) says that 14 people are required for managing the uranium inventory. This seems like a low staffing level to manage 243,000 square foot of storage space with ~71,900 containers in storage. I could find no further information on what these personnel were assumed to do. If this uranium is a true national asset, it probably has the lowest surveillance staff of any of our national treasurers. The uranium management staffing should be reexamined.

**Response: The UMG staff would be primarily responsible for surveillance and maintenance, inventory tracking and related activities, and to some extent security. The UMG storage facility has been configured to require minimum staffing levels, and the storage of material has been established to ensure cost-effective service.**

120. In the fourth paragraph of Section 4.1, I find the statement “worst case assumptions ... are employed”. As I have said, I do not think this statement is correct. One such statement is that 14 people can manage this uranium. I will point out other assumptions I do not think appropriate as I proceed with these comments.

**Response: Comment noted. See response to comment #120.**

121. The EA should analyze and present sabotage scenarios. These might range from theft of uranium (remember it is a national asset) for its value to those that would blow it up to disperse the radionuclides and cause bad publicity. Those 14 people would not be able to prevent either.

**Response: Text has been added to Section 4.2.**

122. The third paragraph on P 4-2 lists  $K_d$  units as L/kg. Please correct the units on this term.

**Response: The units have been re-evaluated and have been determined to be correct.**

123. P 4-6 Table 4-3 lists PORT upgrade cost as \$8.4M and the second paragraph says it is considered to be \$10.9M. Please correct all tables listing the earlier value. The other values in the table for PORT should also be corrected.

**Response: On page 4-6, paragraph 2, the \$10.9M refers to the PORTS construction costs if 125,000 ft<sup>2</sup> of space is built new instead of using all existing space and upgrading it. While existing storage space is available, it seemed prudent to indicate what impacts could be expected if, for some reason, not all of this space could be used. Also, see responses to comments #2 and #6.**

124. P 4-6. It is obvious that DOE from major sites other than PORTS and also at the minor site have not been consulted on this EA. I make this judgment based upon the many tables in this section have say space availability is unknown. This lack of communication with other DOE site personnel should be eliminated and the same level of knowledge applied for each site. The lead statement in the third paragraph on this page confirms the lack of communication.

**Response: All DOE sites considered for interim storage were consulted and specifically asked to provide information about existing space, which could be used for uranium storage.**

125. Table 4.5 (P 4-7), Table 4.7 and Appendix B need units added for the two columns giving transportation fatalities. Are these fatalities per year or per activity?

**Response: The columns for latent cancer fatalities and traffic fatalities are totals for all transportation required for a specific destination/alternative. Column headings have been revised to say “Excess latent cancer fatalities (total)” and “Traffic fatalities (total).”**

126. Section 4.7 on P 4-17 is a very weak analysis for disposition. As I indicated earlier in this set of comments and in my General Comments, the section talks about bounding conditions and impacts then makes an arbitrary statement that all they did was double the impacts of storage. If these are bounding, please explain how you know since no analysis was performed.

**Response: In Section 4.10, DOE states that a rough bounding of impacts would be to take the alternative with the greatest environmental impacts and double them; however, several factors would lessen this effect. These are then discussed in detail in the subsections that follow.**

127. Third bullet on P 4-19 gives the \$8.4M that was later changed to \$10.5M. (See P4-6 comment.)

**Response: See response to comment #124.**

128. Combine the fourth and fifth bullets on P 4-19. They seem to be saying the same thing.

**Response: Comment noted.**

129. Expand the sixth bullet. It is not clear where the judgment came from. It says that commercial sites are less efficient than DOE sites. I continually hear from DOE that they want to do things using commercial approaches since it is more efficient than the DOE system. At best what does this add?

**Response: It is assumed that a commercial site would have to build the entire 243,000 ft<sup>2</sup> of storage space to accommodate this material. Thus, impacts from construction would be the greatest at commercial (and the PDGP) sites.**

130. Section A.2 describes overpacking all containers prior to shipping. Where are the environmental impacts of this action included in the EA. If they are not included, why not?

**Response: See Section 4.2.**

131. The last sentence on P A-2 says worker dose commitment from surveillance and maintenance of this uranium is expected to be less than detectable. I doubt this is a correct statement. The top paragraph on P A-4 goes on to describe the expected radiation dose from containers. These doses were detectable. The last sentence of this top paragraph goes on to make an unsupported conclusion. It says “these dose rates are considered negligible to any receptor”. What about doses to workers who purified this uranium and developed illnesses that DOE (or the government) is now paying for?

**Response: The intermittent nature of surveillance and maintenance activities, combined with a dose rate at 6 meters, which approximates background, would result in dose rates that are considered negligible.**

132. Second paragraph in Section A.3.1 on P A-4 uses a slang approach (1E-6) with no description of what is meant by that notation. Use the proper scientific notation then describe what it means.

**Response: Comment noted.**

133. As I read Section A.3.1.1 on P A-5, particularly the last couple of sentences, I do not know what conclusion you are trying to make.

**Response: Comment noted.**

134. Section A.3.1.2 on PA-6 describes a single container breach as being a bounding accident. This same event could breach multiple containers on adjacent pallets. Why then is a single breach bounding?

**Response: Section A.3.1.2 states that single-container handling accidents are bounding for the accident category “container breach” because these events dominate risk to workers. A container breach is not bounding for all types of accidents.**

135. The next to last sentence in Section A.3.1.2 says that container breach is insignificant compared with a fire. Multiple drum ruptures are speculated above. The logic that shows fire is more significant than rupture should be clearly made or both analysis given.

**Response: Some fires can result in multiple containers breached whereas a forklift rupture or dropping of a drum would more likely result in a single container rupture. Also, fire provides a mechanism for airborne transport once containers are breached. Thus, a multiple container breach with fire to mobilize the uranium materials is a more serious accident than a single or multiple container breach without an associated fire.**

136. The basis for the frequencies given in Table A.7 should be given.

**Response: This is discussed in Section A.3.1.3.**

137. How can the frequencies for tornadoes at all sites be the same as shown on Table A.7? I likewise have the same comment for earthquakes.

**Response: The frequencies in Table A.7 are not the frequencies of earthquake or tornado occurrences at the DOE sites. These vary from site to site. Frequencies shown in Table A.7 indicate the threshold earthquake or tornado loading for which damage is expected from the event. The frequencies are the same because, for example, a higher-intensity earthquake at Paducah occurs at the same frequency as a lesser-intensity earthquake at Oak Ridge.**

138. P A-7. Describe your judgment of how long seismically damaged facilities will be left in the damaged condition while personnel repair other higher risk damaged facilities. This duration of exposure to the elements should be included in the analysis for these facilities.

**Response: Because the vast majority of the materials released would occur during and/or immediately after the seismic event, the assumptions used in the analysis will bound the risks. No estimate of how long damaged facilities would remain damaged is included in the analysis. It should be noted that depletion of the initial source term occurs over time, so the assumption of all material released during the initial phase of the event is conservative.**

139. P A-7 second paragraph references reinforced concrete and structural steel debris as fire mitigation. All storage facilities will not be constructed of concrete thus the concrete and steel should not be relied upon as a fire mitigator. It is unclear from the text of that paragraph how much reliance is afforded by this building material.

**Response: As noted in Section A.3.1.3, following a direct seismic event, a number of small fires may occur. No building structure is assumed to remain, and fire suppression systems are assumed to be totally destroyed. The buildings are assumed to be constructed of steel and concrete, and these materials, unlike wooden structures for example, would not readily support combustion. In addition, the debris and rubble act as shields to prevent the subsequent small fires from spreading and involving the entire stored material inventory.**

140. The second paragraph on page A-8 seems to use the MAR yet MAR is not given on Table A.8.

**Response: Your observation is correct. In order to reduce the complexity of the tables, the MAR and release factor values were not repeated in Table A.9.**

141. The DRs in Table A.8 seem to be totally subjective. Support for the values used should be provided in this appendix.

**Response: References for release factors are given in Section A.3.2.**

142. The ARF × RIF values given in Table A.8 should be referenced.

**Response: References for release factors are given in Section A.3.2.**

143. Add a section describing storage facilities (similar to that given in Section 2 of the EA) to this appendix on page A-9 to support the analysis given in Section A.3.3.2.

**Response: Comment noted. The addition of this information will not affect the intent of the document.**

144. U metal is pyrophoric and when ignited, I would expect that all of the metal would be at risk. U fires are not easily extinguished.

**Response: Comment noted. The degree to which uranium material ignites depends on several factors, including the physical form. For example, uranium metal shavings are easily ignitable, whereas uranium metal in large ingots is not. This factor is included in the assignment of DR, ARF, and RF values for fires involving metals.**

145. The source terms discussed in the second paragraph are very subjective. Add information so your reader will understand why the values were picked. References, showing why values were picked, are always beneficial.

**Response: References for many factors have been provided. See responses to comments #142 and #143, for example.**

146. The frequency of facility fires is stated to be unlikely. Be more quantitative. Is this one chance in 10 years or a frequency of 0.1/year. My judgment says it is a frequency of  $10^{-4}$  to  $10^{-6}$  is unlikely. DOE experience of fires is probably in the range of  $10^{-2}$  to  $10^{-3}$  and with the number of facilities described in this EA fires can be expected to occur during the time interval for this uranium storage.

**Response: DOE guidance for accident analysis states that qualitative estimates of frequency are sufficient and that a frequency range of 1E-2 to 1E-4/year is unlikely. This frequency applies independently to each storage location and alternative; it is not additive.**

147. In Section A.3.3.3 include the long-term consequences as well as short-term consequences. Material lost from containment during a seismic event will probably remain in an exposed condition (to the environment) for weeks and some of it will be transported to surface streams before the low priority uranium cleanup can be accomplished.

**Response: Comment noted. See response to comment #140.**

148. Identify the basis for the 10% and 15% of drums forecasted to be dislodged from the storage array in the first bullet on P A-9.

**Response: These assumptions are documented in the cited reference (Hand 1998).**



149. The third bullet identifies 25% of the material spilled. What is the basis for value? If spilled what is assumed on cleanup and when.

**Response: These assumptions are documented in the cited reference (Hand 1998).**

150. Again metal fires should be considered in a seismic event consequences.

**Response: Comment noted. See response to comment #145.**

151. The second line on P A-10 uses the term conditional probability to reduce the risk from seismic event by a factor of 10. What is the basis for this factor of ten reduction. The arbitrariness of all of these values leaves the EA reader questioning the analysis. Try to support conclusions and not make them so arbitrary.

**Response: Comment noted. As noted on page A-10, this value is an estimate.**

152. Near the middle of P A-10, duration of 1 hour is assumed for airborne release. The longer-term aspects of resuspension of released material should be included for the time the material has not been cleaned up.

**Response: Comment noted. See response to comment #139.**

153. The third bullet, on P A-13, assumes the facility workers will be exposed for 10 seconds. This seems very short for workers who are trying to mitigate consequences or to a worker who is hurt from a seismic event and cannot escape.

**Response: The assumption of 10 seconds is standard for facility worker response to an accident (i.e., “see and flee” policies). Subsequent recovery actions are not included in accident analysis evaluations, as accident response personnel are adequately protected to respond safely to events.**

154. The conclusions given in Tables A.11 and A.12 that facility workers will receive negligible dose and maximum consequence seems inconsistent with co-located workers and the public receiving doses. Calculated values should be given in the Appendix so reviewers can make their own judgment as to its significance.

**Response: Comment noted. See, also, response to comment #154.**

155. Appendix C is very difficult to understand. It is full of technical terms and it is not written so it can be understood by a technically trained stakeholder and I do not think it is of any value to a decision maker or to the general public.

**Response: Comment noted. In order to provide a complete analysis, an assessment of chronic risks to humans and ecological receptors of airborne uranium deposited on soil and surface water and from water to sediment is provided in Appendix C.**

156. On P C-2, in Section C.2.1.1, need to say why Stability Category F was assumed.

**Response: Stability Category F was assumed because it is the most stable (results in least mixing or dilution) and, thus, provides the most conservative risk estimate. Text was added to Section C.2.1.1.**

157. In Section C.2.2.2, why was the assumption made that uranium was deposited in a pond with an average depth of 2 meters? It would seem to me to be worse to deposit it in surface creeks that allow easy access to animals and other ecological system varmints.

**Response: Moving water, such as creeks, permits much more mixing (dilution) than a pond; thus, assuming standing water is a more conservative approach, which results in a greater potential for ecological impacts.**

158. Section C.3, on P C-9, makes the judgment that residential exposure is considered implausible under current site conditions. It is unclear that this is a reasonable judgment. Obviously if one can limit exposure, the consequence of this EA are negligible. This condition should be proven by reasonable analysis not assumed away.

**Response: The risks to residents were calculated and documented in Section C.3 even though such exposure is unlikely. Risks were not “assumed away.”**

159. The table set up of the summary tables (Table C.20 and C.21) is poor. I presume that the last three columns are Radiation Exposure. Likewise three columns are Chemical Exposure. Fix the tables so this differentiation is clear. Add units to the table.

**Response: Table headings have been clarified per comment. Hazard quotients (HQs) are unitless.**

160. My conclusion is that calculated data should be given in tables in the appendix so the reader can see the results of calculations. Information in the Appendix should not be decided to be low or negligible. That conversion is not appropriate here nor in Section 4 until the analysis is being summarizing. (This EA did not summarize the analysis in Section 4 nor did it have a Summary).

**Response: The numerical definitions of high, moderate, low, and negligible risks are presented in Section C.3.5. The summary tables in Appendix C use these word definitions instead of specific numerical values to aid reader understanding.**

*R. L. Huskin*

*Savannah River Operations Office*

161. **Page 2-1**, Section 2.1, 2<sup>nd</sup> Paragraph, 9<sup>th</sup> Line; The stated typical percentage of <sup>235</sup>U in depleted uranium (DU) does not agree with the value shown in Table B.1 on page B-3. Page 2-1 says DU typically contains 0.25% <sup>235</sup>U while Table B.1 says 0.10%.

**Response: The values cited in Table B.1 are the values used in the analysis. While the percentage differs from the typical DU of 0.25%, <sup>235</sup>U use of 0.10% would produce only a very minor difference in the results. This was verified by re-running the analysis using 0.25% U235.**

162. **Page 4-6**, Section 4.4.1, 3<sup>rd</sup> Paragraph; Paragraph states “DOE has not identified existing buildings at (sites other than PORTS) to accommodate these additional uranium materials at this time. Therefore, for analytical purposes, it is assumed new storage space would have to be constructed.” This begs the question of has DOE even made any attempt to identify such existing facilities at sites other than PORTS. Without any such attempt, it would appear any estimates, such as those shown in Table 4.3, would be wholly inaccurate and deliberately skewed in favor of PORTS. This hardly

appears to be an unbiased assessment of the adequacy and availability of sites about the DOE complex.

**Response: See the response to comment #125.**

163. **Page 4-20**, Section 4.12, 3<sup>rd</sup> Paragraph, 1<sup>st</sup> Sentence; As written, the statement leaves the impression that uranium shipments will increase traffic accidents and fatalities because the cargo is uranium, rather than clearly stating any increase in such events would simply be the result of additional vehicles on the nation's roads, regardless of cargo.

**Response: Text cited has been modified to clarify this point.**

164. **Page 4-20**, Section 4.12, 3<sup>rd</sup> Paragraph, 3<sup>rd</sup> Sentence; I don't believe this can be substantiated with the data presented. To state there would be an increase in LCFs to workers and the public from this transportation program, one must calculate both the potential LCFs resulting from the program and the LCFs potentially suffered by workers in the vicinity of the materials in a no-action alternative. I didn't see any such estimate for the no-action alternative in Section 4.3 nor any table presenting estimated LCFs from incident-free operations such as presented in Table 4.1 for accidents. Therefore there is no comparison of the no-action alternative to the other scenarios to determine if there was a net increase or decrease in LCFs.

**Response: The text, as written, indicates that the increased LCFs are due to exposure during transport. Since the uranium materials would be stored somewhere under any alternative, including No Action, the transport risk is in addition to storage risks.**

165. **Page A-12**, Table A.10; The values, in meters, for the distance to site boundaries for several sites such as INEEL and SRS seem inappropriately low. Are values of 526 meters and 727 meters correct for INEEL and SRS, respectively? While not familiar with the assumed locations for the materials at these sites, I can say several sites, such as INEEL and SRS are very large, with site centers greater than 10 miles from their boundaries.

**Response: Because specific storage locations were not provided for several sites, a location central to roads, warehouses, and other similar facilities was postulated. Actual distances may be greater; however, the shorter distances used in this analysis are conservative.**

166. **Page B-2**, Section B.3, 8<sup>th</sup> Dot; I believe the estimated duration of 10 days grossly underestimates the likely transit time for 14,400 km. This would equate to an average vessel speed of 33 knots. I don't believe you'll find many freighters with such speed. The ones currently in use for transporting foreign research reactor spent nuclear fuel back to the U.S. typically are capable of only about 11-12 knots. Only about 1/3 of the apparent speed of the uranium carriers. If one were to state the distances may range from X to 14,400 km with an average of about 5,000 km, an average transit time of 10 days would seem much more reasonable.

**Response: The text has been changed to indicate that 14,400 km is the maximum distance port-to-port. The dose to crew members is now stated in mrem per person per day to account for various distances of shipments.**

167. **Page B-3**, Table B.1; See 1<sup>st</sup> comment concerning page 2-1.

**Response: The values cited in Table B.1 are the actual values used in the analysis. See the response to comment #162.**

168. **Page B-3**, Section B.3, 5<sup>th</sup> Dot; There is no basis provided for the assumption that 1% of accidents would result in release of radioactive materials. Most other stated assumptions appear to have a stated basis.

**Response:** The 1% value is a conservative engineering estimate. The only good test and modeling data that exist are for Type B spent fuel casks and TRUPACT-II containers, and those values range from 0.01% to 0.1%. Sandia has historically used, and currently is using, 1% for Type A and IP3 packages. It has been used in previous DOE NEPA projects [for example: DOE/EA-1290, *Environmental Assessment: Disposition of Russian Federation Titled Natural Uranium* (1999)].

169. **Page B-3**, Section B.3, Last 4 Dots; These are redundant, considering content of the last two dots on page B-2. They should be consolidated.

**Response:** The bullets were consolidated.

170. **Page B-4**, Table B.2; The Eastern Centralized Commercial Storage Site (Barnwell) is located on the SRS Site boundary. Why then, would their values for “Truck Only – Dose Risk” be so different; 0.0036 (SRS) verses 0.00206 (Barnwell)? The values for all other categories for SRS verses Barnwell are almost identical, as they should be.

**Response:** The Barnwell site was selected to represent the location for an eastern centralized commercial storage site since it has existing infrastructure and experience in handling these materials. Other locations in the eastern United States could have been selected. The actual storage location, should a commercial storage site alternative be selected, could be anywhere in the eastern United States. However, we concur with the logic presented in the comment that adjacent storage sites should have virtually identical risk results.

The values in Table B.2 are different because in selecting the nodes to use in the TRAGIS routing code, there are several SRS nodes from which to select and two nodes for Barnwell to choose from. Most likely, the nodes selected to run the analysis are not exactly at the Barnwell LLW site, and the SRS node is almost certainly not at the exact location of the material to be shipped or at the fence line adjacent to the Barnwell site. We used the same node for each origin and destination in all of the analyses. Differences in routing will result in differences in collective dose risks since the RADTRAN code allocates a population weighting factor to rural, suburban, and urban portions of a given route.

Neither routing results in appreciable risks due to transport; however, since we know that the Barnwell and SRS destinations are essentially in the same place, the reader can use the Barnwell route results in Table B.2 for both Barnwell and SRS destinations.

171. **Page B-7**, Section B.5, 2 Dots and last Paragraph; The last paragraph states the total number of shipments could not be estimated because the amount of material in each shipment may not be known. Without an assumption of the quantity of material in each shipment, how were estimates made of the average doses to the crewmembers? If the estimate is made based on the assumed dose rates on the drums as explained in Section 4.2 on page 4-3, I believe 159 mrem per crewmember per shipment, as stated here and at the bottom of page 4-18, is a gross overestimate. The potentials for such exposures would mandate implementation of a radiation protection program that, in turn, would find such exposures to not be ALARA.)

**Response:** DOE concurs that the assumptions used were overly conservative and overstated the risk. Some assumptions have been modified (e.g., 2-hour exposure per crew member to

material between 1 and 16 m, instead of 12 hours, and 4 mrem/hour instead of 6 mrem/hour to be consistent with packaging calculations). The dose rate is 1.8 mrem/hour per crew member.

172. **Page C-12**, Table C.4; When using the values for Intakes in Table C.5, I can reproduce the various values for Dose in Table C.5 and Cancer Intakes in Table C.4, but I can't arrive at the same dose values shown for Cancer Risks in Table C.4. I am assuming the Cancer Risk values are a product of the CEDE derived from the Cancer Intakes and the appropriate risk values from ICRP-60 (i.e., 1 LCF per 2,000 Person-Rem for the "Resident" and 2,500 Person-Rem for the "Standard Worker". If this is the correct method, it appears the Cancer Risk values are too high by a factor of between 2 and 30. It appears as if the dose-to-risk conversion values vary greatly and range between 70 rem and 1150 rem instead of the expected values of 2,500 rem and 2,000 rem for workers and the public, respectively.

**Response:** Cancer risks are estimated by multiplying the intake (pCi or pCi-yr/g) in Table C.4 by the cancer slope factor (risk/pCi or risk/yr/pCi/g) in Table C.7. For example, the risk to the Short-term Emergency Worker from ingestion of U-234 is  $8.8\text{E-}02 \text{ (pCi)} \times 1.58\text{E-}10 \text{ (risk/pCi)} = 1.4\text{E-}11$ . Slope factors are from HEAST, per standard risk assessment practice.

173. **Page C-15**, Table C.7, Upper Table; The issue described above for page C.12 also applies here. Put another way, the Risk/pCi appears to be based on something other than the expected 2,000 or 2,500 (as appropriate) rem/LCF. For example, in the specific case of Inhalation (Risk/pCi) for Uranium-235+D, the stated value appears to be based on a risk-to-dose factor of 756 rem/LCF.

**Response:** See response to comment #173. Slope factors are from HEAST, per standard risk assessment practice.

174. **Page C-15**, Table C.7: It appears some of the footnotes are not shown beneath the table.

**Response:** Table has been modified. The extraneous footnoting was removed.

*John Owsley*

*Director*

*Tennessee Department of Environment and Conservation*

*DOE Oversight Division*

175. Acknowledging that uranium wastes are not part of the scope of this PEA, the document should identify and address any waste streams associated with the re-usable uranium materials. The PEA should provide maps of probable transportation sources.

**Response:** Text in the PEA has been added to acknowledge waste streams associated with disposition or in the event product is later declared to be a waste. Since the waste streams are dependent on the specific end use, and these are only known in general terms, this was not evaluated in detail in the PEA. However, the many thousands of containers used to transport the uranium product would eventually become a waste stream. Either the containers are considered waste and disposed or they are cleaned for reuse, creating a waste stream from the cleaning operations. It is unlikely that the empty containers could be reused as is, except in very limited circumstances.

176. The PEA should provide maps of probably transportation routes.

**Response: Transportation routes were identified for analysis purposes in the PEA using the TRAGIS routing model. Potential impacts from accidents and exposure were addressed in the PEA; however, for security reasons, DOE cannot publish map routes.**

177. The state of Tennessee reiterates its position on not being willing to accept any materials designated for recycle/reuse without definite disposition pathways which may accumulate to long term storage or any waste that may require long term storage prior to treatment/disposal.

**Response: Comment noted.**

178. **Section 2.1 Page 2-1**, the typical end-use products are stated as metal or  $\text{UO}_2$ . On page 2-3, Fernald's largest inventories that fall within the scope of this PEA are stated to be in the form of metal and  $\text{UF}_4$ . The  $\text{UF}_4$  should be added to the statement on page 2-1 that defines the scope.

**Response: The intent of the introductory paragraphs in Section 2.1 is to provide general background information on uranium, not to provide an exhaustive list of all uranium forms covered by the PEA. The list of materials included in the PEA is detailed in Section 2.3.**

179. Moving more material into Pike County would increase the possibility that the Piketon plant's ultimate fate would be a dump site.

**Response: The UMG is developing a disposition strategy to move the material offsite as quickly and reasonably as possible. As noted in responses 35 and 36, the UMG is committed to provide a letter of intent to the State of Ohio regarding this strategy. The disposition strategy will include DOE's commitment to make periodic, not to exceed 5 years, assessments and documentation of the material in storage in order to ensure that the material continues to have reuse potential.**

180. The people of Pike County will not willingly agree to receive any material at Piketon without an iron-clad agreement with DOE that the uranium will either be marketed or removed in a timely manner.

**Response: DOE has committed to aggressively and periodically evaluate disposition strategies at Portsmouth. See response to 179 above.**

